# An Optimal Fourth Order Iterative Method for Solving Non-linear Equations

Mani Sandeep Kumar Mylapalli, Member, IAENG, Rajesh Kumar Palli, Pragathi Chaganti, and Ramadevi Sri

ABSTRACT — For obtaining a simple root of nonlinear equations, we present an optimum fourth-order iterative technique. By examining certain test problems, we investigate the proposed method's convergence criteria and establish its validity and efficiency. Finally, based on numerical and graphical data, it was determined that our methods are comparable in terms of order, efficiency, and processing time to existing methods of similar kind.

Index Terms — Iterative Method, Non-linear Equation, Functional evaluations, Order of Convergence, Efficiency Index.

#### I. INTRODUCTION

any mathematical modeling of any knowledge in science and engineering contains non-linear equations in the form of h(t) = 0 (1.1)

Where 
$$h: D \subseteq R \to R$$
 is a scalar function on an open  
interval *D*. While there is no closed-form solution, these  
equations regularly emerge in real-world problems. As a  
result, the numerical solution of these equations is receiving  
a lot of interest these days. Multi-point iterations are used in  
the most efficient extant root solvers because they transcend  
the theoretical limits of one-point approaches in terms of  
convergence order and computational efficiency. Ostrowski  
[1] proposed the concept of efficiency index as a measure  
for comparing the efficiency of different methods. This  
index is described by  $E = P^{1/N}$ , where *P* is the order of  
convergence and *N* is the total number of function  
evaluations per iteration. Kung and Traub [7] proposed that  
an iteration method without memory based on *N* functional  
evaluations could achieve optimal convergence order  $2^{N-1}$ .  
These iterative methods could be derived using a variety of  
approaches, such as Taylor series, decomposition,  
quadrature, and homotopy methods.

Among all the best approaches, one of the well-known approaches for obtaining the zero of "(1.1)" is the classical

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second-order Newton's method (NR) [6]

$$t_{n+1} = t_n - \frac{h(t_n)}{h'(t_n)}$$
(1.2)

We choose some existing optimal fourth-order methods given as follows:

Francisco-Cordero-Garrido-Juan [5] proposed a two-step novel optimal two-step method (FR) with fourth-order convergence

$$y_{n} = t_{n} - \frac{h(t_{n})}{h'(t_{n})}$$
  
$$t_{n+1} = t_{n} - \frac{h^{2}(t_{n}) + h(t_{n})h(y_{n}) + 2h^{2}(y_{n})}{h(t_{n})h'(t_{n})}$$
(1.3)

Traub-Ostrowski [6] suggested an optimal two-step with fourth-order convergence algorithm (TR), which is given by

$$y_{n} = t_{n} - \frac{h(t_{n})}{h'(t_{n})}$$
$$t_{n+1} = y_{n} - \frac{h(y_{n})}{h'(t_{n})} \left( \frac{h^{2}(t_{n})}{h^{2}(t_{n}) - 2h(t_{n})h(y_{n})} \right)$$
(1.4)

Chun-Lee-Neta-Jovana [4] presented another optimal fourthorder convergence algorithm (CH)

$$y_{n} = t_{n} - \frac{2h(t_{n})}{3h'(t_{n})}$$
  
$$t_{n+1} = t_{n} + \frac{h'(t_{n}) + 3h'(y_{n})}{2h'(t_{n}) - 6h'(y_{n})} \frac{h(t_{n})}{h'(t_{n})}$$
(1.5)

Chun [3] suggested a two-step iterative technique with an ideal fourth-order convergence mechanism (KT)

$$y_{n} = t_{n} - \frac{h(t_{n})}{h'(t_{n})}$$
  
$$t_{n+1} = y_{n} - \frac{h(y_{n})}{h'(y_{n})} \left( \frac{h(t_{n}) + 3h(y_{n})}{h(t_{n}) + h(y_{n})} \right)$$
(1.6)

Ramandeep-Cordero [11] proposed a new iterative approach (RA) for solving nonlinear equations

$$y_{n} = t_{n} - \frac{2h(t_{n})}{h'(t_{n})}$$

$$t_{n+1} = z_{n} - \frac{h(z_{n})}{h'(t_{n})} \left(1 + \frac{2h(z_{n})}{h(t_{n})}\right)$$
(1.7)
where  $z_{n} = \frac{t_{n} + y_{n}}{2}$ .

Rajni-Bahl [10] proposes a second optimal two-step approach (RS) with fourth-order convergence.

$$y_n = t_n - \frac{h(t_n)}{h'(t_n)}$$

$$t_{n+1} = t_n - \left(\frac{-1}{2} + \frac{9h'(t_n)}{8h'(y_n)} + \frac{3h'(y_n)}{8h'(t_n)}\right) \frac{h(t_n)}{h'(t_n)}$$
(1.8)

Santiago-Francisco [12] proposes an optimal fourth-order convergence iterative approach (SA) h(t)

$$y_{n} = t_{n} - \frac{h(t_{n})}{h'(t_{n})}$$
  
$$t_{n+1} = t_{n} - \frac{h^{2}(t_{n}) + h(t_{n})h(y_{n}) + 2h^{2}(y_{n})}{h(t_{n})h'(t_{n})}$$
(1.9)

Anuradha-Jaiswal [2] has presented an efficient optimum method (AN) with fourth-order convergence

$$y_{n} = t_{n} - \frac{2h(t_{n})}{3h'(t_{n})}$$
  
$$t_{n+1} = t_{n} - \left(1 + \frac{9}{16} \left(\frac{h'(y_{n})}{h'(t_{n})} - 1\right)^{2}\right) \left(\frac{4h(t_{n})}{h'(t_{n}) + 3h'(y_{n})}\right) (1.10)$$

Soleymani [14] proposes an optimal fourth-order iterative approach (SO) that is free of derivatives

$$y_{n} = t_{n} - \frac{h(t_{n})}{h'(t_{n})}$$

$$t_{n+1} = y_{n} - \begin{cases} \frac{(h(t_{n}))^{2}}{h'(t_{n})^{2} - 2h(t_{n})h(y_{n})} \frac{h(y_{n})}{h'(t_{n})} \\ \left(1 + \frac{(h(y_{n}))^{2}}{(h(t_{n}))^{2}} \right) \left(1 + \frac{(h(y_{n}))^{2}}{(h'(t_{n}))^{2}} \right) \left(1 + \frac{(h(t_{n}))^{2}}{(h'(t_{n}))^{2}} \right) \end{cases}$$
(1.11)

We begin with many one-step iterative methods in this study, including the classical Newton's method and a new scheme for solving nonlinear equations. To improve the presented iterative method, we use the approximants of the higher derivatives to avoid calculating the function's highorder derivatives. As a result, we can design an iterative formula without having to calculate high-order derivatives.

The remainder of this work is arranged in the following manner. We provide a new two-step optimal fourth-order iterative approach with fast convergence speed in the following part, and we show that the proposed method is at least fourth-order convergent in the following section. A comparison of our new proposed method with previous optimal schemes of similar type utilizing examples from the literature of numerical methods is shown in the penultimate part.

## II. FOURTH ORDER CONVERGENT METHOD

Consider  $t^*$  is an exact root of "(1.1)" where h(t) is continuous and has well defined first derivatives. Let  $t_n$  be the root of  $n^{th}$  approximation of "(1.1)" and is

$$\vec{t} = t_n + \varepsilon_n \tag{2.1}$$

where  $\varepsilon_n$  is the error. Thus, we get

$$h(t^*) = 0 \tag{2.2}$$

writing  $h(t^*)$  by Taylor's series about  $t_n$ , we have

$$h(t^*) = h(t_n) + \varepsilon_n h'(t_n) + \frac{\varepsilon_n^2}{2!} h''(t_n) + \dots$$
(2.3)

Here higher powers of  $\varepsilon_n$  are neglected that to from

 $\varepsilon_n^3$  onwards. Using "(2.2)" and "(2.3)", we have

$$\varepsilon_n = \left[-2h'(t_n) \pm \sqrt{4h'(t_n) - 8h(t_n)h''(t_n)}\right] \div 2h''(t_n)$$
(2.4)

On Substituting  $t^*$  by  $t_{n+1}$  in "(2.1)" and from "(2.4)", we get

$$t_{n+1} = t_n - \frac{2h(t_n)}{h'(t_n)} \left(1 + G(t_n)\right)^{-1}$$
(2.5)

Where

$$G(t_n) = (1 - 2\mu_n)^{\frac{1}{2}}, \ \mu_n = \frac{h(t_n)h''(t_n)}{\left[h'(t_n)\right]^2},$$
  
$$h'(t_n) = 2h[t_{n-1}, t_n] - h'(t_{n-1}) \text{ and}$$
  
$$h''(t_n) = \frac{2}{t_{n-1} - t_n} \left[h'(t_{n-1}) - \frac{h(t_{n-1}) - h(t_n)}{t_{n-1} - t_n}\right]$$

We develop the algorithm by taking "(1.2)" as the first step and "(2.5)" as the second step.

Algorithm: The iterative scheme is computed by  $t_{n+1}$  as

$$z_{n} = t_{n} - \frac{h(t_{n})}{h'(t_{n})}$$
  

$$t_{n+1} = z_{n} - \frac{2h(z_{n})}{h'(z_{n})} (1 + G(t_{n}))^{-1}$$
(2.6)  
where

$$G(t_n) = (1 - 2\rho_n)^{\frac{1}{2}}, \ \rho_n = \frac{h(z_n)h''(z_n)}{\left[h'(z_n)\right]^2},$$
  
$$h'(z_n) = 2h[t_n, z_n] - h'(t_n)$$
  
and 
$$h''(z_n) = \frac{2}{t_n - z_n} \left[h'(t_n) - \frac{h(t_n) - h(z_n)}{t_n - z_n}\right]$$

The method "(2.6)" is called a fourth-order convergent method (MMS), which requires two functional evaluations and one of its first derivative.

#### **III.** CONVERGENCE CRITERIA

Theorem: Let  $t_0 \in D$  be a single zero of a sufficiently differentiable function h for an open interval D. If  $t_0$  is in the neighborhood of  $t^*$ . Then "(2.12)" has fourth-order convergence.

*Proof:* Let the single zero of (1.1) be  $t^*$  and  $t^* = t_n + \varepsilon_n$  then  $h(t^*) = 0$ 

By Taylor's series, writing  $h(t^*)$  about  $t_n$ , we obtain

$$h(t_n) = h'(t^*) \left(\varepsilon_n + c_2 \varepsilon_n^2 + c_3 \varepsilon_n^3 + c_4 \varepsilon_n^4 + \dots\right)$$
(3.1)

$$h'(t_n) = h'\left(t^*\right)\left(1 + 2c_2\varepsilon_n + c_3\varepsilon_n^2 + 4c_4\varepsilon_n^3 + \dots\right)$$
(3.2)

Replacing "(3.1)" and "(3.2)" in the first step of "(2.6)", we get

$$z_n = t^* + c_2 \varepsilon_n^2 + (2c_3 - 2c_2^2)\varepsilon_n^3 + (3c_4 - 7c_2c_3 + 4c_2^3)\varepsilon_n^4 + \dots$$
(3.3)  
From "(3.3)", we obtain

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$$h(z_n) = h(t^*) \begin{pmatrix} c_2 \varepsilon_n^2 + (2c_3 - 2c_2^2) \varepsilon_n^3 + \\ (3c_4 - 7c_2 c_3 + 5c_2^3) \varepsilon_n^4 + \dots \end{pmatrix}$$
(3.4)

$$h'(z_n) = h(t^*) \left( 1 + \left(2c_2^2 - c_3\right)\varepsilon_n^2 + \left(6c_2c_3 - c_2^3 - 2c_4\right)\varepsilon_n^3 + \dots \right)$$
(3.5)

$$h''(z_n) = h(t^*) \Big( 2c_2 + 4c_3\varepsilon_n + \Big( 2c_2c_3 + 6c_4 \Big)\varepsilon_n^2 + \dots \Big)$$
(3.6)

Putting "(3.4)", "(3.5)" and "(3.6)" in the second step of "(2.6)", we get

$$\varepsilon_{n+1} = \left(-c_2 c_3\right) \varepsilon_n^4 + o\left(\varepsilon_n^5\right)$$

Thus, we proved the convergence of this new method which is of fourth-order and its efficiency index is  $\sqrt[3]{4} = 1.587$ .

## **IV. NUMERICAL EXAMPLES**

We offer numerical results on various test equations to check the performance of the fourth-order technique defined by method "(2.6)." We also compare their findings to those obtained using the NR, SO, AN, SA, RS, RA, KI, CH, TR, and FR methodologies. All numerical computations are performed using the mpmath-PYTHON package, starting with a supplied initial approximation t0. Because all of the computations are done with PYTHON (Process Core(TM) i5-10210U CPU @ 2.11 GHz w operating system), we additionally calculate execution time in seconds. We use the following criteria to ensure that iterative calculation programs are terminated when all of the condition at the same time:

Table IV(a) Test functions with their roots

i) 
$$|t_{n+1}-t_n| < 10^{-201}$$

 $h_{2}(t) = \sin t + \cos t + t ; [8]$ 

 $h_4(t) = t^2 + \sin\left(\frac{t}{5}\right) - \frac{1}{4};[8]$ 

 $h_{3}(t) = (t+2)e^{t} - 1;[8]$ 

 $h_{5}(t) = \cos t - t \ ; [16]$ 

 $h_6(t) = t^3 - 10;[16]$ 

 $h_{7}\left(t\right) = e^{-t} + \cos t \ ; [17]$ 

 $h_{\mathbf{Q}}(t) = e^{\sin t} - t + 1; [17]$ 

 $h_{10}(t) = \sin^2 t - t^2 + 1;[13]$ 

 $h_{0}(t) = t^{4} - 7.79075t^{3} + 2.511t - 1.674$ ;[15]

Test Functions

ii)  $|h(t_{n+1})| < 10^{-201}$ .

 $h_1(t) = \sin(2\cos t) - 1 - t^2 + e^{\sin(t^3)};[8]$ 

formula [9]

$$p_{C} = \frac{\log\left[\left(t_{n+1} - t_{n}\right) / \left(t_{n} - t_{n-1}\right)\right]}{\log\left[\left(t_{n} - t_{n-1}\right) / \left(t_{n-1} - t_{n-2}\right)\right]}$$

taken into consideration the last four approximations in the iterative process.

Table IV(b)Analogy of Efficiency

Methods	$p_c$	Ν	Ε
NR	2.00	2	1.414
SO	4.00	3	1.587
AN	4.00	3	1.587
SA	4.00	3	1.587
RS	4.00	3	1.587
RA	4.00	3	1.587
KI	4.00	3	1.587
CH	4.00	3	1.587
TR	4.00	3	1.587
FR	4.00	3	1.587
MMS	4.00	3	1.587

Where  $p_c$  is the convergence order, N is the number of functional values per iteration and E is the efficiency-index.

Table IV(c) Analogy of Different Methods

cessor Intel(K)							
Iz with 64-bit late the CPU	ethod	to	n	$ t_{n+1}-t_n $	$h(t_{n+1})$	NFE	CPU
owing stopping	h <sub>1</sub> (t)	-1					
tion computer	NR		9	1.6e-201	4.0e-201	18	0.00652
ditions are met	SO		5	2.2e-200	4.1e-201	15	0.00602
	AN		6	1.5e-201	4.1e-201	18	0.00522
	SA		5	0	4.1e-201	15	0.00717
	RS		6	1.8e-201	4.1e-201	18	0.00611
	RA		6	5.7e-201	4.1e-201	18	0.00615
	KI		6	4.1e-201	4.1e-201	18	0.00717
	CH		6	1.7e-201	4.1e-201	18	0.00527
roots	TR		5	0	4.1e-201	15	0.00731
*	FR		6	5.6e-201	4.1e-201	18	0.00559
Root, t	MMS		5	8.1e-201	4.1e-201	15	0.00513
		-0.5					
-0.7848959876612	NR		10	8.9e-201	2.4e-200	20	0.00732
0.45((0)47045(7)(	SO		6	1.6e-201	4.1e-200	18	0.00745
-0.4300247043070	AN		7	1.5e-201	4.1e-200	21	0.00672
0 442954010022	SA		6	0	4.1e-200	18	0.00786
-0.442854010023	RS		7	1.7e-201	4.1e-200	21	0.00714
0 40000201708012	RA		7	9.6e-201	4.1e-200	21	0.00733
0.40999201798913	KI		7	4.1e-201	4.1e-200	21	0.00859
	CH		7	1.8e-201	4.1e-200	21	0.00672
0.73908513321516	TR		6	0	4.1e-200	18	0.00805
2 15443460003188	FR		7	9.7e-200	4.1e-200	21	0.00754
2.13443409003188	MMS		6	8.1e-201	4.1e-201	18	0.00671
1 74613953040801	h2(t)	0.1					
1.74013733040001	NR		9	2.4e-201	5.3e-201	18	0.00317
2 63066414792790	SO		6	6.1e-201	1.8e-200	18	0.00302
2.03000414792790	AN		6	2.5e-201	5.3e-201	18	0.00315
0 27775054284172	SA		5	3.2e-201	5.3e-201	15	0.00355
0.27773934264172	RS		6	2.3e-201	5.3e-201	18	0.00317
1 40440164921524	RA		6	9.3e-201	5.3e-201	18	0.00325
1.40449104821534	KI		6	6.9e-201	5.3e-201	18	0.00327
	- CH		6	2.6e-201	5.3e-201	18	0.00307
	TR		5	2.8e-201	5.3e-201	15	0.00357
e, we calculate	FR		6	4.8e-200	5.3e-201	18	0.00298
) using the	MMS		5	1.2e-201	5.3e-201	15	0.00293
, , ,		-1					

To verify the theoretical order of convergence, we the computational order of convergence  $(p_c)$  using

									_				
NR		8	2.4e-201	5.3e-201	16	0.00289	MMS		5	8.1e-201	2.4e-201	15	0.00232
SO		5	1.0e-200	5.3e-201	15	0.00271		0.5					
AN		6	2.5e-201	5.3 e-20	18	0.00272	NR		9	8.1e-201	1.3e-200	18	0.00231
SA		5	0	5.3e-201	15	0.00299	SO		5	1.6e-201	2.4e-201	15	0.00221
RS		6	2.6e-201	5.3e-201	18	0.00271	AN		6	8 0e-201	1 3e-200	18	0.00226
RA		5	9.3e-201	5.3e-201	15	0.00279	SA		5	0.00-201	$2.4 \circ 201$	15	0.00220
KI		5	7 3e-201	1.8e-201	15	0.00321	SA		5	0	2.46-201	10	0.00244
CH		6	$2.3e_{-201}$	5 3e-201	18	0.00270	RS		6	1.6e-201	2.4e-201	18	0.00223
TD		5	1.62 201	5.30-201	15	0.00270	RA		5	7.3e-201	1.3e-200	15	0.00214
		5	1.66-201	5.3e-201	15	0.00357	KI		5	4.8e-201	2.4e-201	15	0.00264
FR		5	8.9e-201	5.3e-201	15	0.00295	CH		6	1.7e-201	2.4e-201	18	0.00289
MMS		5	1.2e-201	5.3e-201	15	0.00270	TR		5	0	2.4e-201	15	0.00268
h3(t)	-1.2						FR		5	7.3e-201	1.3e-201	15	0.00273
NR		11	2.4e-201	4.0e-201	22	0.00251	MMS		5	8.1e-201	2.4e-201	15	0.00220
SO			Divergent				$\mathbf{h}_{c}(t)$	10	U	0.110 201	2010 201	10	0100220
ΔN		9	$2.4e_{-}201$	4 1e-201	27	0.00373		1.7	0	1 (- 200	2.0- 100	10	0.00150
SA		7	0	4.10-201	21	0.00560	NK		9	1.66-200	2.0e-199	18	0.00159
SA		/	0	4.16-201	21	0.00300	SO		6	1.3e-200	2.0e-199	18	0.00166
RS		8	2.3e-201	4.1e-201	24	0.00251	AN		6	1.7e-200	2.0e-199	18	0.00149
RA		15	9.7e-201	4.1e-201	45	0.00343	SA		6	0	2.0e-199	18	0.00158
KI			Divergent				RS		6	1.5e-200	2.0e-199	18	0.00173
CH		7	2.5e-201	4.1e-201	21	0.00321	RA		6	7.8e-200	1.2e-198	18	0.00152
TR		6	1.1e-201	4.1e-201	18	0.00332	KI		8	4 5e-200	2 0e-198	24	0.00160
FR		15	9.7e-201	4.1e-201	45	0.00343	CH		6	1.50 200	2.00 190	18	0.00140
MMS		6	1.2e-201	4 1e-201	18	0.00228			5	1.00-201	2.06-199	10	0.00149
WINDS	0.1	0	1.20-201	4.10-201	10	0.00228	IK		S	0	2.0e-199	15	0.00157
	0.1						FR		6	7.5e-200	1.5e-199	18	0.00177
NR		10	2.4e-201	4.0e-201	20	0.00251	MMS		5	6.5e-201	2.0e-201	15	0.00150
SO		6	2.3e-201	4.1e-201	18	0.00270		2.5					
AN		7	2.5e-201	4.1e-201	21	0.00241	NR		9	1.6e-200	2.0e-189	18	0.00150
SA		6	2.8e-201	4.1e-201	18	0.00238	SO		6	1.3e-200	2.0e-199	18	0.00155
RS		7	2.4e-200	4.1e-201	21	0.00224	ΔN		6	1 5e-200	2 0e-199	18	0.00157
RΔ		6	9.7e-201	4 1e-201	18	0.00294	SA		5	7.10.200	1.200 - 109	15	0.00157
		6	7.20.201	4.10-201	10	0.00274	SA		5	1.7 200	1.26-198	10	0.00109
		0	7.56-201	4.16-201	10	0.00271	RS		6	1.7e-200	2.0e-199	18	0.00160
CH		/	2.3e-200	4.1e-201	21	0.00253	RA		6	6.2e-200	2.0e-199	18	0.00159
TR		6	5.3e-201	1.1e-201	18	0.00252	KI		6	4.5e-200	2.0e-198	18	0.00158
ED		6	0.7. 201	4 1 201	10	0.00275	CH		6	1 6e-201	2 Oe-199	18	0.00148
гк		0	9.76-201	4.16-201	10	0.00275	CII		0	1.00 201	2.00-177	10	0.00110
гк MMS		6	9.7e-201 1.2e-201	4.1e-201 4.1e-201	18	0.00273	TR		5	0	2.0e-199	15	0.00181
$\frac{\text{MMS}}{\text{h}_4(t)}$	0.2	6	1.2e-201	4.1e-201 4.1e-201	18	0.00273	TR FR		5 6	0 7.5e-200	2.0e-199 2.0e-199 2.0e-199	15 18	0.00181
$\frac{MMS}{h_4(t)}$	0.2	6 10	2.0e-201	4.1e-201 4.1e-201	18 18 20	0.00273	TR FR MMS		5 6 5	0 7.5e-200 6.5e-201	2.0e-199 2.0e-199 2.0e-199 2.0e-199	15 18 15	0.00181 0.00181 0.00149
$\frac{MMS}{h_4(t)}$ NR	0.2	6 10 6	2.0e-201 2.4e-201	4.1e-201 4.1e-201 2.2e-201 2.2e-201	18 18 20 18	0.00273 0.00218 0.00272 0.00272	TR FR MMS	1	5 6 5	0 7.5e-200 6.5e-201	2.0e-199 2.0e-199 2.0e-199 2.0e-199	15 18 15	0.00181 0.00181 0.00149
MMS h4(t) NR SO	0.2	6 10 6 7	2.0e-201 2.4e-201 2.1e 201	4.1e-201 4.1e-201 2.2e-201 2.2e-201 2.0e-201	18 18 20 18 21	0.00273 0.00218 0.00272 0.00295 0.00295	TR FR MMS h <sub>7</sub> (t)	1	5 6 5	0 7.5e-200 6.5e-201	2.0e-199 2.0e-199 2.0e-199 2.0e-199	15 15 18 15	0.00181 0.00181 0.00181 0.00149
MMS h4(t) NR SO AN	0.2	6 10 6 7	2.0e-201 2.4e-201 2.1e-201	4.1e-201 4.1e-201 2.2e-201 2.2e-201 2.0e-201	18       18       20       18       21       21	0.00273 0.00218 0.00272 0.00295 0.00293 0.00293	TR FR MMS <b>h</b> 7(t) NR	1	5 6 5 8	1.80 201 0 7.5e-200 6.5e-201 4.8e-201	2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201	15 15 18 15 16	0.00181 0.00181 0.00181 0.00149
FK       MMS       h4(t)       NR       SO       AN       SA	0.2	6 10 6 7 7	2.0e-201 2.4e-201 2.1e-201 0	4.1e-201 4.1e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201	18 18 20 18 21 21 21	0.00273 0.00218 0.00272 0.00295 0.00293 0.00336	TR FR MMS h7(t) NR SO	1	5 6 5 8 6	1.80 201 0 7.5e-200 6.5e-201 4.8e-201 6.5e-201	2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5e-201	15 18 15 16 18	0.00181 0.00181 0.00149 0.00331 0.00304
$\frac{MMS}{h_4(t)}$ NR SO AN SA RS	0.2	6 10 6 7 7 7 7	2.0e-201 2.4e-201 2.1e-201 0 7.7e-201	4.1e-201 4.1e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 7.7e-201	18       18       20       18       21       21       21	0.00273 0.00218 0.00272 0.00295 0.00293 0.00336 0.00319	TR FR MMS h7(t) NR SO AN	1	5 6 5 8 6 6	0 7.5e-200 6.5e-201 4.8e-201 6.5e-201 4.7e-201	2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5e-201 6.5e-201	15 15 15 15 16 18 18	0.001181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310
MMS h4(t) NR SO AN SA RS RA	0.2	6 6 10 6 7 7 7 6	2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201	4.1e-201 4.1e-201 2.2e-201 2.2e-201 2.2e-201 7.7e-201 2.2e-201	18       20       18       21       21       18	0.00273 0.00218 0.00295 0.00293 0.00336 0.00319 0.00317	TR FR MMS h <sub>7</sub> (t) NR SO AN SA	1	5 6 5 8 6 5 5	0 7.5e-200 6.5e-201 4.8e-201 6.5e-201 4.7e-201 0	2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5e-201 6.5e-201 6.5e-201	15 18 15 16 18 18 18 15	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00339
MMS h4(t) NR SO AN SA RS RA KI	0.2	6 10 6 7 7 7 6 7	2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 7.3e-201	4.1e-201 4.1e-201 2.2e-201 2.2e-201 2.2e-201 7.7e-201 2.2e-201 7.7e-201	18       20       18       21       21       18       21	0.00273 0.00218 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292	TR FR MMS h7(t) NR SO AN SA RS	1	5 6 5 8 6 6 5 6	1.60 201 0 7.5e-200 6.5e-201 4.8e-201 4.7e-201 0 4.9e-201	2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201	15 18 15 16 18 18 15 18	0.00110 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00339 0.00310
MMS h4(t) NR SO AN SA RS RA KI CH	0.2	10 6 7 7 7 6 7 7 7	2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 7.3e-201 1.9e-201	4.1e-201 4.1e-201 2.2e-201 2.2e-201 2.2e-201 7.7e-201 2.2e-201 7.7e-201 2.2e-201	18       18       20       18       21       21       18       21       21       21       21       21       21       21       21       21       21       21       21       21       21       21       21	0.00273 0.00218 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305	TR FR MMS h7(t) NR SO AN SA RS RA	1	5 6 5 8 6 5 6 5 6 5	1.60 201 0 7.5e-200 6.5e-201 4.8e-201 4.7e-201 0 4.9e-201 2.2e-200	2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201	15 18 15 16 18 18 15 18 15 18 15	0.00110 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00339 0.00310 0.00311
MMS h4(t) NR SO AN SA RS RA KI CH TR	0.2	10 6 7 7 7 6 7 7 6 7	2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 7.3e-201 1.9e-201 1.2e-201	4.1e-201 4.1e-201 2.2e-201 2.2e-201 2.2e-201 7.7e-201 2.2e-201 7.7e-201 2.2e-201 2.2e-201	18       18       20       18       21       21       18       21       18       21       18       21       18       21       18       21       18	0.00273 0.00218 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318	TR FR MMS h7(t) NR SO AN SA RS RA KI	1	5 6 5 8 6 5 6 5 5 5 5	1.60 201 0 7.5e-200 6.5e-201 4.8e-201 4.7e-201 0 4.9e-201 2.2e-200 1.6e-200	2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201	15 15 18 15 16 18 18 15 18 15 15	0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00339 0.00310 0.00311 0.00364
MMS h4(t) NR SO AN SA RS RA KI CH TR FR	0.2	6 10 6 7 7 6 7 6 7 6 6 6	2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 7.3e-201 1.9e-201 1.2e-201 8.9e-201	4.1e-201 4.1e-201 2.2e-201 2.2e-201 2.2e-201 7.7e-201 2.2e-201 7.7e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201	18       18       20       18       21       21       18       21       18       21       18       21       18       21       18       21       18       21       18       21       18	0.00273 0.00218 0.00295 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299	TR FR MMS h7(t) NR SO AN SA RS RA KI CH	1	5 6 5 8 6 5 6 5 5 6 5 5 6	1.62 201 0 7.5e-200 6.5e-201 4.8e-201 6.5e-201 4.7e-201 0 4.9e-201 2.2e-200 1.6e-200 4.8e-200	2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201	15 15 18 15 16 18 18 15 15 15 15 18	0.00181 0.00181 0.00181 0.00331 0.00304 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319
MMS h4(t) NR SO AN SA RS RA KI CH TR FR MMS	0.2	6 10 6 7 7 6 7 6 5	2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 1.9e-201 1.2e-201 8.9e-201 8.9e-201	4.1e-201 4.1e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 7.7e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201	18           18           20           18           21           21           21           18           21           18           21           18           21           18           21           18           21           18           19	0.00273 0.00218 0.00295 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254	TR FR MMS h7(t) NR SO AN SA RS RA KI CH TP	1	5 6 5 8 6 5 6 5 5 6 5 5 6 5	1.62 201 0 7.5e-200 6.5e-201 4.8e-201 6.5e-201 4.7e-201 0 4.9e-201 2.2e-200 1.6e-200 4.8e-200 0	2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201	15 15 18 15 16 18 18 15 15 18 15 15 18 15	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00311 0.00364 0.00319 0.00319
MMS h4(t) NR SO AN SA RS RA KI CH TR FR FR MMS	0.2	6 6 7 7 7 6 7 6 6 5	2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 7.3e-201 1.9e-201 1.2e-201 8.9e-201 8.9e-201 8.9e-201 8.1e-201	4.1e-201 4.1e-201 2.2e-201 2.2e-201 2.2e-201 7.7e-201 2.2e-201 7.7e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201	18           20           18           21           21           21           21           18           21           18           21           18           19	0.00273 0.00218 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254	TR FR MMS h7(t) NR SO AN SA RS RA KI CH TR EP	1	5 6 5 8 6 5 6 5 5 6 5 5 6 5 5 6 5	1.62 201 0 7.5e-200 6.5e-201 4.8e-201 4.7e-201 0 4.9e-201 2.2e-200 1.6e-200 4.8e-200 0 2.2a 200	2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201	15 18 15 16 18 18 15 15 18 15 15 18 15	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.004480
MMS h4(t) NR SO AN SA RS RA KI CH TR FR FR MMS	0.2	6 6 7 7 7 6 7 6 5	9.7e-201 1.2e-201 2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 1.9e-201 1.2e-201 8.9e-201 8.9e-201 8.9e-201 8.9e-201	4.1e-201 4.1e-201 2.2e-201 2.2e-201 2.2e-201 7.7e-201 2.2e-201 7.7e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201	18       18       20       18       21       21       21       18       21       18       21       18       15	0.00273 0.00218 0.00295 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254	TR FR MMS hr(t) NR SO AN SA RS RA KI CH TR FR	1	5 6 5 8 6 5 6 5 5 6 5 5 5 5 5 5 5	1.66 201           0           7.5e-200           6.5e-201           4.8e-201           6.5e-201           4.7e-201           0           4.9e-201           2.2e-200           1.6e-200           0           2.2e-200           2.2e-200           2.2e-200	2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201	15 18 15 16 18 18 15 18 15 15 18 15 15 15 15 15	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00045
MMS h4(t) NR SO AN SA RS RA KI CH TR FR MMS NR	0.2	6 10 6 7 7 7 6 7 7 6 5 10	9.7e-201 1.2e-201 2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 1.9e-201 1.2e-201 8.9e-201 8.9e-201 8.1e-201 2.0e-201	4.1e-201 4.1e-201 2.2e-201 2.2e-201 2.2e-201 7.7e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201	18         20         18         21         21         21         18         21         18         21         18         21         18         21         21         18         21         22	0.00273 0.00218 0.00295 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254	TR FR MMS h <sub>7</sub> (t) NR SO AN SA RS RA KI CH TR FR MMS	1	5 6 5 8 6 5 6 5 5 5 5 5 5	1.66 201           0           7.5e-200           6.5e-201           4.8e-201           6.5e-201           4.7e-201           0           4.9e-201           2.2e-200           1.6e-200           0           2.2e-200           3.2e-201	2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201	15         15         18         15         16         18         15         18         15         18         15         18         15         15         15         15         15         15         15         15         15         15         15         15         15	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00305
MMS h4(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO	0.2	6 6 7 7 7 6 7 6 5 5 10 6	9.7e-201 1.2e-201 2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 1.9e-201 1.2e-201 8.9e-201 8.1e-201 2.0e-201 2.0e-201 2.4e-201	4.1e-201 4.1e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201	18         20         18         21         21         21         21         18         21         18         21         18         21         18         21         18         21         18         18         15         20         18	0.00273 0.00218 0.00295 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254	TR FR MMS h <sub>7</sub> (t) NR SO AN SA RS RA KI CH TR FR MMS	1	5 6 5 8 6 6 5 5 6 5 5 5 5 5	1.36 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         1.6e-200         4.8e-201         0         2.2e-200         3.2e-201	2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201	15 18 15 16 18 18 15 15 15 15 15 15 15	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00305
MMS h4(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN	0.2	6 6 7 7 7 6 7 7 6 5 10 6 7	9.7e-201 1.2e-201 2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 1.9e-201 1.2e-201 8.9e-201 8.1e-201 2.0e-201 2.4e-201 2.1e-201	4.1e-201 4.1e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201	18         20         18         21         21         21         21         18         21         18         21         18         21         18         21         18         21         18         18         15	0.00273 0.00218 0.00295 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254 0.00251 0.00261 0.00286	TR FR MMS h7(t) NR SO AN SA RS RA KI CH TR FR MMS NR	1	5 6 5 8 6 6 5 5 6 5 5 5 5 5 8	1.62 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         1.6e-200         4.8e-201         0         2.2e-200         3.2e-201	2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201	15         15         18         15         16         18         15         18         15         18         15         15         15         15         15         15         15         15         16	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00305
MMS ha(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA	0.2		9.7e-201 1.2e-201 2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 1.9e-201 1.2e-201 8.9e-201 8.1e-201 2.0e-201 2.4e-201 2.4e-201 2.1e-201 0	4.1e-201 4.1e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201	18         20         18         21         21         21         21         21         21         18         21         18         15         20         18         21         18         15	0.00273 0.00218 0.00295 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254 0.00254	TR FR MMS h7(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO	1	5 6 5 8 6 6 5 5 6 5 5 5 5 5 5 5 5 5 5 5	1.36 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         1.6e-200         4.8e-201         0         2.2e-200         3.2e-201         4.8e-201         6.5e-201	2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201	15         15         18         15         18         15         18         15         18         15         15         16         17         16         15         16         15	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00305
MMS MAS ha(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS	0.2		9.7e-201 1.2e-201 2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 1.9e-201 1.9e-201 8.9e-201 8.1e-201 2.0e-201 2.4e-201 2.1e-201 0 1.9e-201	4.1e-201 4.1e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 7.7e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201	18         20         18         21         21         21         21         21         21         18         21         18         21         18         21         18         21         18         15         20         18         21         18         21         18         21         18         21         18         21         18         21         18         21         18         21         18         21         18         21	0.00273 0.00218 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254 0.00251 0.00261 0.00261 0.00286 0.00342 0.00275	TR FR MMS h7(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN	1	5 6 5 8 6 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5	1.36 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         1.6e-200         4.8e-201         0         4.8e-200         0         4.8e-200         0         4.8e-200         0         4.8e-201         6.5e-201         4.8e-201         6.5e-201         4.7e-201	2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201	15         15         18         15         16         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         16         15         18	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00305
MMS MMS h4(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA RS RA	0.2		9.7e-201 1.2e-201 2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 1.9e-201 1.2e-201 8.1e-201 2.0e-201 2.4e-201 2.1e-201 0 1.9e-201 8.5e-201	4.1e-201 4.1e-201 2.2e-201	18         20         18         21         21         21         21         21         21         18         21         18         21         18         21         18         21         18         15         20         18         21         18         21         18         21         18         21         18         21         18         21         18         21         18         21         18          21          18	0.00273 0.00218 0.00295 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254 0.00251 0.00261 0.00251 0.00251 0.00275 0.00275 0.00278	rr FR MMS hr(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA	1	5 6 5 6 5 6 5 5 6 5 5 5 5 5 5 5 5 5 5 5	1.62 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         1.6e-200         0         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.8e-201         6.5e-201         4.7e-201         2.1e-200	2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201	15         15         18         15         16         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         16         15         18         15         16         15         18         15         18         15	0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00305
NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI	0.2		9.7e-201 1.2e-201 2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 1.9e-201 8.9e-201 8.1e-201 2.0e-201 2.4e-201 2.1e-201 0 1.9e-201 8.5e-201 6 5 a 201	4.1e-201 4.1e-201 2.2e-201	18         20         18         21         21         21         21         21         21         21         18         21         18         21         18         21         18         15         20         18         21         18         21         18         21         18         21         18         21         18         18         18         18         18	0.00273 0.00218 0.00295 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254 0.00251 0.00261 0.00251 0.00261 0.00255 0.00275 0.00275 0.00275 0.00278 0.00278	TR FR MMS h7(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS	1	5 6 5 8 6 6 5 5 6 5 5 5 5 5 5 5 5 5 5 5	1.62 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         1.6e-200         0         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.8e-201         6.5e-201         4.7e-201         2.1e-200         9 4e-200	2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201	15         15         18         15         16         18         15         18         15         18         15         16         17         18         15         18         15         16         15         16         15         18         15         18         15         18         15         18         15         18	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00305 0.00341 0.00310 0.00315 0.00345 0.00347
MMS M4(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA RS RA KI CH CH CH CH CH CH CH CH CH CH	0.2		9.7e-201 1.2e-201 2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 1.9e-201 1.2e-201 8.9e-201 8.1e-201 2.0e-201 2.4e-201 2.1e-201 0 1.9e-201 8.5e-201 6.5e-201 7.7e-201	4.1e-201 4.1e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 7.7e-201 2.2e-2	18         18         20         18         21         21         21         21         21         18         21         18         21         18         21         18         15         20         18         21         18         21         18         21         18         21         18         21         18         21         18         21         18         21         18         21         18         21         18         21         18         21	0.00273 0.00218 0.00295 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254 0.00251 0.00261 0.00286 0.00342 0.00275 0.00278 0.00278 0.00322	rr FR MMS hr(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA RS PA	1	5 6 5 8 6 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5	1.62 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         1.6e-200         4.8e-201         6.5e-201         4.8e-200         0         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.7e-201         2.1e-200         9.4e-200         2.1e-200	2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201	15         15         18         15         16         18         15         18         15         15         15         16         15         16         15         16         15         16         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         15	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00305 0.00341 0.00310 0.00315 0.00345 0.00437 0.00265
MMS MMS h4(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH SO AN SA RS RA CH TR FR MMS	0.2		9.7e-201 1.2e-201 2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 1.9e-201 1.2e-201 8.9e-201 8.1e-201 2.0e-201 2.4e-201 2.1e-201 0 1.9e-201 8.5e-201 6.5e-201 7.7e-201	4.1e-201 4.1e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 7.7e-201 2.2e-2	18         18         20         18         21         21         21         21         18         21         18         15         20         18         21         18         21         18         21         18         21         18         21         18         21         18         21         18         21         18         21         18         21         18         21         18         18         18         18         18         18         18         18         18         18         18         18         10	0.00273 0.00218 0.00295 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254 0.00251 0.00261 0.00275 0.00275 0.00278 0.00272 0.00262	TR FR MMS h <sub>7</sub> (t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI SO AN	1	5 6 5 8 6 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5	1.62 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.8e-200         0         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.7e-201         2.1e-200         9.4e-200         2.1e-201         1.6e-201	2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201	15         15         18         15         16         18         15         18         15         18         15         16         15         16         15         16         15         16         15         16         15         16         15         18         15         18         15         18         15         18         15         16         15         18         15         18         15         18         15         15         15	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00345 0.00341 0.00315 0.00345 0.00345 0.00437 0.00365
MMS MMS h4(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR CH TR FR MMS	0.2		9.7e-201 1.2e-201 2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 1.9e-201 1.2e-201 8.9e-201 8.1e-201 2.0e-201 2.4e-201 2.1e-201 0 1.9e-201 8.5e-201 6.5e-201 7.7e-201 6.6e-201	4.1e-201 4.1e-201 2.2e-2	18         18         20         18         21         21         21         21         21         18         21         18         21         18         21         18         20         18         21         18         21         18         21         18         21         18         18         18         18         18         18	0.00273 0.00218 0.00295 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254 0.00251 0.00251 0.00286 0.00342 0.00275 0.00275 0.00278 0.00272 0.00262 0.00262 0.00262 0.00329	TR FR MMS hr(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA RS RA KI	1	5 6 5 8 6 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5	1.62 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         1.6e-200         0         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.8e-201         6.5e-201         4.8e-201         0         2.2e-200         3.2e-201         1.6e-200         9.4e-200         2.1e-201         1.6e-200	2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201 6.5e-201	15         15         18         15         16         18         15         18         15         18         15         15         15         16         15         15         15         15         15         15         15         15         16         15         16         15         16         15         16         15         16         15         16         15         16         15         16         15         15         15         15         15         15         15         15         15         15         15         15         15         15         15         15         15         15	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00345 0.00341 0.00345 0.00345 0.00345 0.00345 0.00383
MMS MMS ha(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS	0.2		9.7e-201 1.2e-201 2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 1.9e-201 1.2e-201 8.9e-201 8.1e-201 2.0e-201 2.4e-201 2.1e-201 0 1.9e-201 8.5e-201 6.5e-201 7.7e-201 6.6e-201 8.9e-201	4.1e-201 4.1e-201 2.2e-201	18         18         20         18         21         21         21         21         21         18         21         18         21         18         21         18         15         20         18         21         18         21         18         21         18	0.00273 0.00218 0.00272 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254 0.00251 0.00261 0.00251 0.00261 0.00255 0.00275 0.00275 0.00275 0.00275 0.00275 0.00275 0.00275 0.00227 0.00227 0.00229 0.00322 0.00329 0.00303	TR FR MMS h <sub>7</sub> (t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH	1	5 6 5 8 6 6 5 5 5 6 5 5 5 6 5 5 5 6 5 5 5 6 5 5 5 5 5 5 6 5 5 5 5 5 6 5	1.60 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         1.6e-200         4.8e-201         6.5e-201         4.8e-200         0         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.7e-201         2.1e-200         9.4e-200         2.1e-201         1.6e-200         4.9e-201	2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201	15         15         18         15         16         18         15	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00341 0.00315 0.00345 0.00345 0.00345 0.00345 0.00345 0.00383 0.00318
MMS MMS ha(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS	0.2	$ \begin{array}{c}       6 \\       6 \\       7 \\       7 \\       7 \\       6 \\       7 \\       7 \\       6 \\       7 \\       6 \\       5 \\       \hline       10 \\       6 \\       7 \\       6 \\       7 \\       6 \\       7 \\       6 \\       7 \\       6 \\       7 \\       6 \\       7 \\       6 \\       7 \\       6 \\       7 \\       6 \\       5 \\       \hline       5 \\   \end{array} $	9.7e-201 1.2e-201 2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 1.9e-201 1.9e-201 8.9e-201 8.1e-201 2.0e-201 2.4e-201 2.4e-201 2.1e-201 0 1.9e-201 8.5e-201 6.5e-201 7.7e-201 6.6e-201 8.9e-201 6.1e-201	4.1e-201 4.1e-201 2.2e-2	18         18         20         18         21         21         21         21         21         18         21         18         21         18         21         18         15	0.00273 0.00218 0.00272 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254 0.00251 0.00261 0.00251 0.00261 0.00251 0.00275 0.00275 0.00275 0.00278 0.00222 0.00322 0.00322 0.00303 0.00250	TR FR MMS hr(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR SO AN SA RS RA KI CH TR	1	5 6 5 8 6 6 5 5 6 5 5 5 5 5 5 5 5 5 5 5	1.00 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         1.6e-200         4.8e-201         6.5e-201         4.8e-200         0         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.7e-201         2.1e-200         9.4e-200         2.1e-201         1.6e-200         4.9e-201         0	2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201	15         15         18         15         16         18         15         18         15         18         15         16         15         18         15         18         15         16         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00341 0.00315 0.00341 0.00341 0.00347 0.00341 0.00345
MMS MMS ha(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS hs(t)	0.2	$ \begin{array}{c}       6 \\       6 \\       7 \\       7 \\       7 \\       6 \\       7 \\       7 \\       6 \\       7 \\       6 \\       5 \\       \hline       10 \\       6 \\       7 \\       6 \\       7 \\       6 \\       7 \\       6 \\       5 \\       \hline       5 \\       \hline       10 \\       6 \\       7 \\       6 \\       5 \\       \hline       5 \\       \hline       10 \\       6 \\       7 \\       6 \\       5 \\       5 \\       \hline       10 \\       6 \\       7 \\       6 \\       5 \\       5 \\       \hline       10 \\       6 \\       7 \\       6 \\       5 \\       5 \\       \hline   $	2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 7.3e-201 1.9e-201 1.2e-201 8.9e-201 8.1e-201 2.0e-201 2.4e-201 2.1e-201 0 1.9e-201 8.5e-201 6.5e-201 7.7e-201 6.6e-201 8.9e-201 6.1e-201	4.1e-201 4.1e-201 2.2e-2	18         18         20         18         21         21         21         21         21         18         21         18         21         18         21         18         15	0.00273 0.00218 0.00212 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254 0.00251 0.00251 0.00251 0.00275 0.00275 0.00275 0.00275 0.00278 0.00222 0.00322 0.00322 0.00329 0.00303 0.00250	TR FR MMS hr(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR KI CH TR FR	1	5 6 5 8 6 6 5 5 6 5 5 5 5 5 5 5 5 5 5 5	1.00 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.8e-200         0         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.7e-201         2.1e-200         9.4e-200         2.1e-201         1.6e-200         4.9e-201         0         2.1e-201         1.6e-200         4.9e-201         0         2.2e-202	2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201	15         15         18         15         16         18         15         18         15         18         15         16         15         18         15         16         15         16         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00341 0.00315 0.00345
MMS MMS ha(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS hs(t) NR NR SO AN SA RS RA KI CH TR FR MMS RA KI CH TR FR MMS RA KI CH TR FR MMS RA RS RA KI CH TR FR MMS RA RS RA RS RA KI CH TR FR MMS RA RA RA RA RA RA RA RA RA RA	0.2		9.7e-201 1.2e-201 2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 1.9e-201 1.2e-201 8.9e-201 8.1e-201 2.0e-201 2.4e-201 2.1e-201 0 1.9e-201 8.5e-201 6.5e-201 8.9e-201 6.6e-201 8.9e-201 1.6e-201	4.1e-201 4.1e-201 2.2e-201	18         18         20         18         21         21         21         21         21         18         21         18         21         18         21         18         21         18         21         18         21         18         21         18         18         15         18         18         18         18         18         18         18         18         18         18         18         18         18	0.00273 0.00218 0.00272 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254 0.00251 0.00261 0.00251 0.00261 0.00251 0.00275 0.00275 0.00275 0.00275 0.00275 0.00275 0.00275 0.00222 0.00322 0.00322 0.00303 0.00250 0.00242	TR FR MMS hr(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS	1	5 6 5 8 6 6 5 5 6 5 5 5 5 5 5 5 5 5 5 5	1.00 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.8e-200         0         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.7e-201         2.1e-200         9.4e-200         2.1e-201         1.6e-200         4.9e-201         0         2.2e-201         0         2.2e-202         3.2e-201	2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201	15         15         18         15         16         18         15         18         15         18         15         16         15         18         15         16         15         16         15         16         15         18         15         18         15         18         15         18         15         18         15         18         15	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00341 0.00315 0.00345 0.00318 0.00318 0.00345 0.00311 0.00345 0.0035 0.0055 0.0055 0.0055 0.05
NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA SA SA SA SA SA SA SA SA SA SA SA SA	0.2		9.7e-201 1.2e-201 2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 1.9e-201 1.2e-201 8.9e-201 2.0e-201 2.4e-201 2.1e-201 0 1.9e-201 8.5e-201 6.5e-201 6.6e-201 1.5e-201 1.5e-201	4.1e-201 4.1e-201 2.2e-201	18         18         20         18         21         21         21         21         21         18         21         18         21         18         21         18         15         20         18         21         18         21         18          18          18          18          18          18          18          18          18          18	0.00273 0.00218 0.00212 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254 0.00254 0.00261 0.00261 0.00261 0.00261 0.00275 0.00275 0.00275 0.00275 0.00275 0.00275 0.00275 0.00275 0.00222 0.00262 0.00329 0.00303 0.00250 0.00242 0.00263	TR FR MMS h7(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS hs(t)	1	5 6 5 8 6 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5	1.62 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         1.6e-200         0         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.7e-201         2.1e-200         9.4e-200         2.1e-201         1.6e-200         4.9e-201         0         2.2e-202         3.2e-201	2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201	15         15         18         15         16         18         15         18         15         18         15         16         15         16         15         16         15         16         15         16         15         18         15         18         15         18         15         18         15	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00449 0.00305 0.00341 0.00315 0.00345 0.00318
PR MMS h₄(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS h₅(t) NR SO AN NR SO AN SA RA KI CH TR FR MMS AN SA RA SA SA SA RA SA SA SA SA SA SA SA SA SA S	0.2		9.7e-201 1.2e-201 2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 1.9e-201 8.9e-201 8.9e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 6.5e-201 6.5e-201 6.6e-201 8.9e-201 1.5e-201 1.5e-201 1.5e-201 1.7e-201	4.1e-201 4.1e-201 2.2e-2	18         20         18         21         21         21         21         21         21         21         18         21         18         21         18         21         18         15         20         18         21         18         21         18         21         18	0.00273 0.00218 0.00295 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254 0.00254 0.00251 0.00261 0.00261 0.00275 0.00275 0.00275 0.00275 0.00278 0.00262 0.00262 0.00329 0.003250 0.00242 0.00263 0.00277	TR FR MMS h7(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA NR SO AN SA NR SO AN SA NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI SO AN SA RS RA RS RA NN SO AN SA RS RA NN SA RS RA RS RA NN SO AN SA RS RS RA RS RS RA NN SO AN SA RS RA RS RS RA NN SO AN SA RS RS RA RS RS RA RS RA NN SO AN SA RS RA NN SO AN RS RS RA NN SO AN RS RS RA RS RS RA RS RA NN SO AN RS RS RA RS RS RS RA RS RS RA RS RS RS RA RS RS RS RA RS RS RA RS RS RS RS RS RS RS RS RS RS RS RS RS	1	5       6         5       6         5       6         5       6         5       6         5       6         5       6         5       6         5       6         5       6         5       6         5       6         5       6         5       6         5       6         5       6         5       6         5       7         6       5         7       7         8       7         6       5         7       7         8       7         6       5         7       7         8       7         7       7         8       7         8       7         8       7         8       7         8       7         8       7         8       7         8       7         8       8         8       8         8	1.62 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         1.6e-200         4.8e-201         6.5e-201         4.8e-200         0         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.7e-201         2.1e-200         9.4e-200         2.1e-201         1.6e-200         4.9e-201         0         2.2e-202         3.2e-201	2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201	15         15         18         15         16         18         15         18         15         18         15         16         15         16         15         16         15         16         15         18         15         18         15         18         15         18         15         18         15         16         15         16	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00449 0.00305 0.00341 0.00315 0.00345 0.00318 0.00318 0.00310 0.00394 0.00394 0.00394 0.00345 0.0035 0.0035 0.0035 0.0035 0.0035 0.0035 0.0035 0.0035 0.
FR         MMS         h₄(t)         NR         SO         AN         SA         RS         RA         KI         CH         TR         FR         MMS         O         AN         SO         NR         SO         NR         SO         AN         SO	0.2		9.7e-201 1.2e-201 2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 1.9e-201 1.9e-201 8.9e-201 2.0e-201 2.4e-201 2.1e-201 0 1.9e-201 8.5e-201 6.5e-201 6.6e-201 8.9e-201 1.5e-201 1.5e-201 1.7e-201 2.4e-201 2.202 2.201 2.201 2.201 2.201 2.201 2.201 2.202 2.201 2.201 2.202 2.201	4.1e-201 4.1e-201 2.2e-2	18         18         20         18         21         21         21         21         21         21         18         21         18         21         18         15         20         18         21         18         21         18         21         18	0.00273 0.00218 0.00218 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254 0.00251 0.00251 0.00275 0.00250 0.0	TR FR MMS h7(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SO AN SA RS RA KI CH TR FR MMS NR SO AN SO AN SO AN SO AN SA RS RA KI CH TR FR MMS NR SO AN AN AN AN AN AN AN AN AN AN	1.7	5         6         5         8         6         5         8         6         5         8         6         5         8         6         5         8         6         5         6         5         6         5         6         5         6         5         6         5         6         5         6         5         6         5         6         6         6         6         5         6         6         5         6         6         6         6         6         6         6         6         6         6         7         6         7         6 <td< td=""><td>1.62 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         1.6e-200         4.8e-201         6.5e-201         4.8e-200         0         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.7e-201         2.1e-200         9.4e-200         2.1e-201         1.6e-200         4.9e-201         0         2.2e-202         3.2e-201</td><td>2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 8.8e-200 8.8e-200 8.8e-200</td><td>15         15         18         15         16         18         15         18         15         18         15         16         15         16         15         16         15         16         15         16         15         18         15         18         15         18         15         16         15         16         15         16         15         16         15</td><td>0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00341 0.00310 0.00315 0.00345 0.0035 0.005 0.0</td></td<>	1.62 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         1.6e-200         4.8e-201         6.5e-201         4.8e-200         0         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.7e-201         2.1e-200         9.4e-200         2.1e-201         1.6e-200         4.9e-201         0         2.2e-202         3.2e-201	2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 8.8e-200 8.8e-200 8.8e-200	15         15         18         15         16         18         15         18         15         18         15         16         15         16         15         16         15         16         15         16         15         18         15         18         15         18         15         16         15         16         15         16         15         16         15	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00341 0.00310 0.00315 0.00345 0.0035 0.005 0.0
MMS M4(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS MS RA KI CH TR FR MMS AN SO AN SA RS RA SO AN SO AN SO AN SO AN SO AN SO AN SO AN SO AN SA RS RA SO AN SA RS RA SO AN SA RS RA SO AN SA RS RA SO AN SA RS RA SO AN AN SO AN AN AN AN AN AN AN AN AN AN	0.2		9.7e-201 1.2e-201 2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 1.9e-201 1.9e-201 8.9e-201 8.9e-201 2.0e-201 2.4e-201 2.4e-201 0 1.9e-201 8.5e-201 6.5e-201 6.5e-201 6.6e-201 8.9e-201 1.5e-201	4.1e-201 4.1e-201 2.2e-201 2.2e-201 2.2e-201 2.2e-201 7.7e-201 2.2e-201 2.4e-2	18         18         20         18         21         21         21         21         21         18         21         18         15         20         18         21         18         21         18         21         18         21         18         21         18         21         18	0.00273 0.00218 0.00272 0.00295 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254 0.00251 0.00261 0.00261 0.00275 0.00275 0.00275 0.00275 0.00278 0.00262 0.00329 0.00303 0.00250 0.00242 0.00263 0.00227 0.00245	CH         TR         FR         MMS         h7(t)         NR         SO         AN         SA         RS         RA         KI         CH         TR         FR         MMS         NR         SO         AN         SA         RS         RA         KI         CH         TR         FR         MMS         NR         SO         AN         SA         RS         RA         KI         CH         TR         FR         MMS         NR         SO         AN         SA         RS         RA         KI         CH         TR         FR         MMS         hs(t)         NR         SO         AN          AN	1.7	5         6         5         6         5         8         6         5         8         6         5         8         6         5         8         6         5         6         5         8         6         5         6         5         6         5         6         5         6         5         6         5         6         5         6         5         6         6         5         6         5         6         6         5         6         6         6         6         6         6         6         6         6         6         7         6 <td< td=""><td>1.62 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         1.6e-200         4.8e-201         6.5e-201         4.8e-200         0         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.8e-201         6.5e-201         4.7e-201         2.1e-200         9.4e-200         2.1e-201         1.6e-200         4.9e-201         0         2.2e-202         3.2e-201</td><td>2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5e-200 6.5e-200 6.5e-200 7.5e-200 7.5e-200 7.5e-200 7.5e-200 7.5e-200 7.5e-200 7.5e-200 7.5e-200</td><td>15         15         18         15         16         18         15         18         15         15         15         16         15         16         15         16         15         16         15         16         15         18         15         18         15         15         15         16         15         15         16         15         15         15         16         15         16         15         16         15         16         15</td><td>0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00305 0.00341 0.00315 0.00345 0.00345 0.00345 0.00345 0.00345 0.00345 0.00345 0.00383 0.00318 0.00427 0.00394 0.00394 0.00394</td></td<>	1.62 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         1.6e-200         4.8e-201         6.5e-201         4.8e-200         0         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.8e-201         6.5e-201         4.7e-201         2.1e-200         9.4e-200         2.1e-201         1.6e-200         4.9e-201         0         2.2e-202         3.2e-201	2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5e-200 6.5e-200 6.5e-200 7.5e-200 7.5e-200 7.5e-200 7.5e-200 7.5e-200 7.5e-200 7.5e-200 7.5e-200	15         15         18         15         16         18         15         18         15         15         15         16         15         16         15         16         15         16         15         16         15         18         15         18         15         15         15         16         15         15         16         15         15         15         16         15         16         15         16         15         16         15	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00305 0.00341 0.00315 0.00345 0.00345 0.00345 0.00345 0.00345 0.00345 0.00345 0.00383 0.00318 0.00427 0.00394 0.00394 0.00394
MMS MMS h4(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS MS RA KI CH TR FR MMS AN SA RS RA KI CH TR FR MMS AN SA RS RA KI CH TR FR MMS AN SA RS RS RA RS RS RS RS RS RS RS RS RS RS	0.2		9.7e-201 1.2e-201 2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 1.9e-201 1.2e-201 8.9e-201 2.0e-201 2.4e-201 2.1e-201 0 1.9e-201 8.5e-201 6.5e-201 7.7e-201 6.6e-201 8.9e-201 1.5e-201 1.5e-201 1.7e-201 2.4e-201 1.5e-201 1.5e-201 1.7e-201 2.4e-201 1.5e-201	4.1e-201 4.1e-201 2.2e-2	18         18         20         18         21         21         21         21         18         21         18         15         20         18         21         18         21         18         21         18         21         18	0.00273 0.00218 0.00295 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254 0.00251 0.00261 0.00251 0.00275 0.00275 0.00275 0.00278 0.00275 0.00272 0.00262 0.00262 0.00329 0.00250 0.00242 0.00242 0.00242 0.00245 0.00245 0.00234	TR FR MMS hr(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA SA SA SA SO AN SA SA SO AN SA SO AN SA SO AN SA SO AN SA SA SA SA SA SA SA SA SA SA SA SA SA	1.7	5         6         5         6         5         8         6         5         8         6         5         8         6         5         8         6         5         8         6         5         8         6         5         6         6         7         8         6	1.62 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         1.6e-200         4.8e-201         6.5e-201         4.8e-200         0         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.8e-201         6.5e-201         4.8e-201         0         2.1e-200         9.4e-200         2.1e-201         1.6e-200         4.9e-201         0         2.2e-202         3.2e-201         3.5e-200         1.9e-200         6.2e-200	2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5	15         15         18         15         16         18         15         18         15         18         15         16         15         16         15         16         15         16         15         16         15         18         15         18         15         15         15         16         15         15         16         15         18         15         16         15         18         15         15         15         16         15         18         17         18         17         18         17         18         17         18         17         18         17         18	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00341 0.00341 0.00315 0.00345 0.00345 0.00345 0.00345 0.00345 0.00345 0.00345 0.00383 0.00318 0.00394 0.00394 0.00394 0.00392
FRMMSh₄(t)NRSOANSARSRAKICHTRFRMMSNRSOANSARSRAKICHTRFRMMSANSARSRAKICHTRFRMMSh₅(t)NRSOANSARSRARSRA	0.2	$ \begin{array}{c}       6 \\       6 \\       7 \\       7 \\       7 \\       6 \\       7 \\       7 \\       6 \\       7 \\       6 \\       5 \\       \hline       10 \\       6 \\       7 \\       6 \\       7 \\       6 \\       7 \\       6 \\       7 \\       6 \\       7 \\       6 \\       5 \\       9 \\       6 \\       5 \\       6 \\       5 \\       6 \\       6 \\       5 \\       6 \\       6 \\       6 \\       5 \\       6 \\       6 \\       6 \\       5 \\       6 \\       6 \\       6 \\       5 \\       6 \\$	9.7e-201 1.2e-201 2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 1.9e-201 1.2e-201 8.9e-201 2.0e-201 2.4e-201 2.4e-201 2.4e-201 0 1.9e-201 8.5e-201 6.5e-201 6.5e-201 6.6e-201 8.9e-201 1.5e-201 1.5e-201 1.7e-201 2.4e-201 1.5e-201 1.5e-201 1.7e-201 2.4e-201 1.5e-201 1.5e-201 1.7e-201 2.4e-201 1.5e-201	4.1e-201 4.1e-201 2.2e-2	18         18         20         18         21         21         21         21         21         18         21         18         21         18         20         18         21         18         21         18         21         18	0.00273 0.00218 0.00295 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254 0.00251 0.00251 0.00251 0.00251 0.00275 0.00275 0.00275 0.00275 0.00275 0.00227 0.00262 0.00303 0.00250 0.00242 0.00225 0.00242 0.00242 0.00242 0.00242 0.00242 0.00245 0.00231	TR FR MMS hr(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA SO AN SA SA	1	5       6         5       6         5       6         5       6         5       6         5       6         5       6         5       6         5       6         5       6         5       6         6       5         6       5         6       5         8       5         6       5         8       5         6       5	1.00 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.8e-200         0         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.8e-201         6.5e-201         4.8e-201         0         2.1e-200         9.4e-200         2.1e-201         1.6e-200         4.9e-201         0         2.2e-202         3.2e-201         0         2.2e-202         3.2e-201         3.5e-200         1.9e-200         6.2e-200         3.9e-201	2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5	15         15         18         15         16         18         15         18         15         18         15         16         15         16         15         16         15         16         15         18         15         16         15         18         15         16         15         18         15         16         15         16         15         16         15         18         15         16         15         18         15	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00341 0.00341 0.00315 0.00345 0.00345 0.00345 0.00345 0.00345 0.00345 0.00345 0.00345 0.00383 0.00318 0.00311 0.00394 0.00394 0.00392 0.00410
FR         MMS         h₄(t)         NR         SO         AN         SA         RS         RA         KI         CH         TR         FR         MMS         O         NR         SO         AN         SA         RS         RA         KI         CH         TR         FR         MMS         AN         SA         RS         RA         KI         CH         TR         FR         MMS         AN         SA         RS         RA         KI	0.2	$ \begin{array}{c}       6 \\       6 \\       7 \\       7 \\       7 \\       6 \\       7 \\       7 \\       6 \\       7 \\       7 \\       6 \\       5 \\       7 \\       6 \\       5 \\       7 \\       6 \\       7 \\       6 \\       7 \\       6 \\       7 \\       6 \\       5 \\       9 \\       6 \\       5 \\       6 \\       5 \\       6 $	9.7e-201         1.2e-201         2.0e-201         2.4e-201         2.1e-201         0         7.7e-201         8.9e-201         7.3e-201         1.9e-201         1.2e-201         8.9e-201         8.9e-201         2.0e-201         2.4e-201         2.1e-201         0         1.9e-201         8.5e-201         6.5e-201         7.7e-201         6.6e-201         8.9e-201         6.1e-201         1.5e-201         1.5e-201         1.7e-201         2.4e-201         1.5e-201         1.7e-201         2.4e-201         1.5e-201         7.7e-201	4.1e-201 4.1e-201 2.2e-201 2.4e-2	18         18         20         18         21         21         21         21         21         18         21         18         21         18         21         18         21         18         21         18         21         18         21         18	0.00273 0.00218 0.00212 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254 0.00251 0.00261 0.00251 0.00261 0.00251 0.00275 0.00275 0.00275 0.00275 0.00275 0.00262 0.00262 0.00262 0.00329 0.00303 0.00250 0.00242 0.00263 0.00227 0.00245 0.00234 0.00231 0.00255	CIITRFRMMShr(t)NRSOANSARSRAKICHTRFRMMSNRSOANSARSRAKICHTRFRMMSNRSOANSAFRMMShs(t)NRSOANSARSANSARS	1	5         6         5         6         5         8         6         5         8         6         5         8         6         5         8         6         5         6         5         8         5         6         5         6         5         6         5         6         5         6         5         6         5         6         5         6         5         6	1.00 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         1.6e-200         4.8e-201         6.5e-201         4.8e-200         0         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.8e-201         0         2.1e-200         9.4e-200         2.1e-201         1.6e-200         4.9e-201         0         2.2e-202         3.2e-201         3.5e-200         1.9e-200         6.2e-200         3.9e-201         6.2e-200         3.9e-201         6.2e-200	2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5	15         15         18         15         16         18         15         18         15         18         15         16         15         16         15         15         15         15         15         15         16         15         18         15         18         15         16         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00341 0.00345 0.003427 0.00394 0.00436 0.00392 0.00410 0.00432
FR         MMS         h₄(t)         NR         SO         AN         SA         RS         RA         KI         CH         TR         FR         MMS         O         AN         SO         AN         SO         AN         SO         AN         SO         AN         SA         RS         RA         KI         CH         TR         FR         MMS         h₅(t)         NR         SO         AN         SSO         AN         SA         RS         RA         KI         CH	0.2	$\begin{array}{c} 6 \\ 6 \\ \hline 10 \\ 6 \\ 7 \\ 7 \\ 6 \\ 7 \\ 7 \\ 6 \\ 5 \\ \hline 10 \\ 6 \\ 7 \\ 6 \\ 5 \\ \hline 6 \\ 6 \\ 5 \\ \hline 9 \\ 6 \\ 5 \\ 6 \\ 6 \\ 6 \\ 6 \\ 6 \\ 6 \\ 6 \\ 6$	9.7e-201 1.2e-201 2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 1.9e-201 1.9e-201 8.9e-201 8.1e-201 2.0e-201 2.4e-201 2.4e-201 2.4e-201 6.5e-201 7.7e-201 6.6e-201 8.9e-201 1.5e-201 1.5e-201 1.6e-201 1.5e-201	4.1e-201 4.1e-201 2.2e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201	18         18         20         18         21         21         21         21         21         21         18         21         18         21         18         21         18         20         18         21         18         21         18	0.00273 0.00218 0.00272 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254 0.00251 0.00261 0.00251 0.00261 0.00251 0.00275 0.00275 0.00275 0.00275 0.00262 0.00262 0.00262 0.00262 0.00262 0.00250 0.00242 0.00250 0.00242 0.00245 0.00231 0.00255 0.00226	TR FR MMS hr(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS RA RS RA KI CH TR FR MMS RA RS RS RA RS RS RA RS RS RS RA RS RS RS RA RS RS RS RS RS RS RS RS RS RS RS RS RS	1.7	5       6         6       5         6       5         6       5         6       5         6       5         6       5         6      5 <tr< td=""><td>1.36 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.8e-200         0         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.8e-201         0         2.2e-200         3.2e-201         0         2.1e-200         9.4e-200         2.1e-201         1.6e-200         4.9e-201         0         2.2e-202         3.2e-201         3.5e-200         1.9e-200         6.2e-200         3.9e-201         6.2e-200         3.9e-201         6.2e-200         6.8e-201</td><td>2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5</td><td>15         15         18         15         16         18         15         18         15         18         15         16         15         16         15         16         15         16         15         18         15         16         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15</td><td>0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00341 0.00341 0.00315 0.00345 0.00352 0.00345 0.00350 0.0035</td></tr<>	1.36 201         0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.8e-200         0         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.8e-201         0         2.2e-200         3.2e-201         0         2.1e-200         9.4e-200         2.1e-201         1.6e-200         4.9e-201         0         2.2e-202         3.2e-201         3.5e-200         1.9e-200         6.2e-200         3.9e-201         6.2e-200         3.9e-201         6.2e-200         6.8e-201	2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5	15         15         18         15         16         18         15         18         15         18         15         16         15         16         15         16         15         16         15         18         15         16         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00489 0.00341 0.00341 0.00315 0.00345 0.00352 0.00345 0.00350 0.0035
MMS MMS ha(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS h5(t) NR SO AN SA RS RA KI CH TR FR MMS AN SA RS RA KI CH TR FR MMS CH TR FR TR FR CH TR FR CH TR FR CH TR FR CH TR FR CH TR FR CH TR FR CH TR FR CH TR FR CH TR FR CH TR FR CH TR FR CH TR FR CH TR FR CH TR FR CH TR FR CH TR FR CH TR FR TR FR TR FR TR FR TR FR TR FR TR FR TR FR TR FR TR FR TR TR FR FR FR FR FR FR FR FR FR F	0.2	$\begin{array}{c} 6 \\ 6 \\ \hline 10 \\ 6 \\ 7 \\ 7 \\ 6 \\ 7 \\ 7 \\ 6 \\ 5 \\ \hline 10 \\ 6 \\ 7 \\ 6 \\ 5 \\ \hline 10 \\ 6 \\ 7 \\ 6 \\ 5 \\ \hline 9 \\ 6 \\ 6 \\ 5 \\ 6 \\ 6 \\ 6 \\ 6 \\ 5 \\ \hline \end{array}$	2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 7.3e-201 1.9e-201 1.9e-201 8.9e-201 2.0e-201 2.4e-201 2.1e-201 0 1.9e-201 8.5e-201 6.5e-201 7.7e-201 6.6e-201 8.9e-201 1.5e-201 1.5e-201 1.5e-201 1.5e-201 0 0 0 0 0 0 0 0 0 0 0 0 0	4.1e-201 4.1e-201 2.2e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201 2.4e-201	18         18         20         18         21         21         21         21         21         21         18         21         18         21         18         21         18         20         18         21         18         20         18         21         18	0.00273 0.00218 0.00272 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254 0.00251 0.00261 0.00251 0.00261 0.00251 0.00275 0.00275 0.00275 0.00275 0.00262 0.00262 0.00262 0.00262 0.00262 0.00250 0.00242 0.00242 0.00245 0.00231 0.00255 0.00226 0.00274	TR FR MMS hr(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS KI CH TR FR MMS KI CH SO AN SA RS RA KI CH SO AN SA RS RA KI CH SO AN SA RS RA KI CH TR FR MMS KI SO AN SA RS RA KI SO AN SA RS RA KI SO AN SA RS RA KI SO AN SA RS RA KI CH TR FR MS SO AN SA RS RA KI SO AN SA RS RA KI SO AN SA RS RA KI SO AN SA RS RA KI SO AN SA RS RA KI SO AN SA RS RA KI SO AN SA RS RA KI SO AN SA RS RA KI SO AN SA RS RA KI SO AN SA RS RA SO AN SA RS RA KI SO AN SA RS RA RS RA SO AN SA RS RA SO AN SA RS RA SO AN SA RS RS RA RS RS RA RS RS RA RS RS RA RS RS RA RS RS RA RS RS RA RS RS RS RS RS RS RS RS RS RS RS RS RS	1.7	5         6         5         6         5         8         6         5         8         6         5         8         6         5         8         5         8         6         5         8         5         6         5         6         5         6         5         6         5         6         5         6         5         6         6         5         6         6         6         6         7         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6 <td< td=""><td>1.60 201           0           7.5e-200           6.5e-201           4.8e-201           6.5e-201           4.7e-201           0           4.9e-201           2.2e-200           1.6e-200           4.8e-201           6.5e-201           4.8e-200           0           2.2e-200           3.2e-201           4.8e-201           6.5e-201           4.7e-201           2.1e-200           9.4e-200           2.1e-201           1.6e-200           4.9e-201           0           2.2e-202           3.2e-201           0           2.2e-202           3.5e-200           1.9e-200           6.2e-200           3.9e-201           6.2e-200           6.8e-201           Divergent</td><td>2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5</td><td>15         15         18         15         16         18         15         18         15         18         15         16         15         16         15         16         15         16         15         18         15         16         15         18         15         16         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15</td><td>0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00449 0.00305 0.00341 0.00305 0.00345 0.00394 0.00394</td></td<>	1.60 201           0           7.5e-200           6.5e-201           4.8e-201           6.5e-201           4.7e-201           0           4.9e-201           2.2e-200           1.6e-200           4.8e-201           6.5e-201           4.8e-200           0           2.2e-200           3.2e-201           4.8e-201           6.5e-201           4.7e-201           2.1e-200           9.4e-200           2.1e-201           1.6e-200           4.9e-201           0           2.2e-202           3.2e-201           0           2.2e-202           3.5e-200           1.9e-200           6.2e-200           3.9e-201           6.2e-200           6.8e-201           Divergent	2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 6.5	15         15         18         15         16         18         15         18         15         18         15         16         15         16         15         16         15         16         15         18         15         16         15         18         15         16         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15	0.00181 0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00449 0.00305 0.00341 0.00305 0.00345 0.00394 0.00394
MMS MMS ha(t) NR SO AN SA RS RA KI CH TR FR MMS NR SO AN SA RS RA KI CH TR FR MMS hs(t) NR SO AN SA RS RA KI CH TR FR MMS AN SA RS RA KI CH TR FR MMS CH TR FR MMS RA KI CH TR FR MMS CH TR FR FR MMS CH TR FR FR FR FR FR FR FR FR FR F	0.2	$\begin{array}{c} 6 \\ 6 \\ 10 \\ 6 \\ 7 \\ 7 \\ 6 \\ 7 \\ 7 \\ 6 \\ 5 \\ 10 \\ 6 \\ 7 \\ 6 \\ 5 \\ 6 \\ 5 \\ 6 \\ 6 \\ 5 \\ 6 \\ 6 \\ 5 \\ 6 \\ 6$	2.0e-201 2.4e-201 2.1e-201 0 7.7e-201 8.9e-201 7.3e-201 1.9e-201 1.2e-201 8.9e-201 2.0e-201 2.4e-201 2.4e-201 2.1e-201 0 1.9e-201 8.5e-201 6.5e-201 7.7e-201 6.6e-201 1.5e-201 1.7e-201 2.4e-201 1.5e-201 1.5e-201 1.5e-201 0 0 5.7e-201 0 0 5.7e-201 0 0 5.7e-201 0 0 5.7e-201 0 0 5.7e-201 0 0 5.7e-201 0 0 5.7e-201 0 0 5.7e-201 0 0 5.7e-201 0 0 5.7e-201 0 0 5.7e-201 0 0 5.7e-201 0 0 5.7e-201 0 0 5.7e-201 0 0 5.7e-201 0 0 5.7e-201 0 0 5.7e-201 0 0 5.7e-201 5.7e-201 0 5.7e-201	4.1e-201 4.1e-201 2.2e-201 2.4e-201	18         18         20         18         21         21         21         21         21         21         18         21         18         21         18         21         18         18         20         18         21         18         21         18	0.00273 0.00218 0.00295 0.00295 0.00293 0.00336 0.00319 0.00317 0.00292 0.00305 0.00318 0.00299 0.00254 0.00251 0.00261 0.00261 0.00261 0.00251 0.00275 0.00275 0.00275 0.00275 0.00262 0.00262 0.00262 0.00262 0.00262 0.00262 0.00263 0.00227 0.00245 0.00245 0.00231 0.00255 0.00226 0.00274 0.00281	$\begin{array}{c} \text{CH} \\ \text{TR} \\ \text{FR} \\ \text{MMS} \\ \hline \text{h}_{7}(t) \\ \text{NR} \\ \text{SO} \\ \text{AN} \\ \text{SO} \\ \text{AN} \\ \text{SA} \\ \text{RS} \\ \text{RA} \\ \text{KI} \\ \text{CH} \\ \hline \text{TR} \\ \text{FR} \\ \hline \text{MMS} \\ \hline \hline \text{MMS} \\ \hline \hline \text{NR} \\ \text{SO} \\ \text{AN} \\ \text{SA} \\ \text{RS} \\ \text{RA} \\ \text{KI} \\ \text{CH} \\ \hline \text{TR} \\ \hline \text{FR} \\ \hline \text{MMS} \\ \hline \hline \text{MMS} \\ \hline \hline \text{AN} \\ \hline \text{SO} \\ \text{AN} \\ \hline \text{SA} \\ \text{RS} \\ \hline \text{RA} \\ \hline \text{KI} \\ \hline \text{CH} \\ \hline \end{array}$	1.7	5       6       5         5       6       5         8       6       6       5       5         8       6       6       5       5       5         8       6       6       5       5       5       5         8       5       6       5       5       5       5       5         8       5       6       5       5       5       5       5       6         9       7       7       8       5       6       5       5       6       5       5       6       5       6       5       5	0         7.5e-200         6.5e-201         4.8e-201         6.5e-201         4.7e-201         0         4.9e-201         2.2e-200         1.6e-200         4.8e-201         6.5e-201         4.9e-201         2.2e-200         3.2e-201         4.8e-201         6.5e-201         4.7e-201         2.1e-200         9.4e-200         2.1e-201         1.6e-200         4.9e-201         0         2.2e-202         3.2e-201         3.5e-200         1.9e-200         6.2e-200         3.9e-201         6.2e-200         3.9e-201         6.2e-200         3.9e-201         6.2e-200         3.9e-201         6.2e-200         6.8e-201         Divergent         3.6e-200	2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 2.0e-199 6.5e-201 8.8e-200 8.8e-200 8.8e-200 8.8e-200 8.8e-200 8.8e-200	15         15         18         15         16         18         15         18         15         18         15         16         15         16         15         16         15         16         15         16         15         18         15         16         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15         18         15	0.00181 0.00181 0.00149 0.00331 0.00304 0.00310 0.00310 0.00310 0.00310 0.00311 0.00364 0.00319 0.00417 0.00449 0.00305 0.00341 0.00305 0.00341 0.00315 0.00345 0.00394 0.00436 0.00392 0.00440 0.00432 0.00449 0.004427

TR		5	0	8.8e-201	15	0.00458
FR		5	6.8e-200	1.4e-198	15	0.00404
MMS		5	4.2e-200	1.4e-199	15	0.00393
	3.3	-				
NR	010	9	6.2e-200	1.4e-199	18	0.00422
SO		6	3 5e-200	8 8e-200	18	0.00440
AN		6	3 5e-200	8 8e-200	18	0.00441
SA		6	6.8e-200	1 4e-199	18	0.00471
RS		6	3 5e-201	8 8e-201	18	0.00450
RA		6	6 7e-200	1 4e-199	18	0.00436
KI		0	Divergent	1.10 199	10	0.00120
СН		6	2 5e-200	8 8e-200	18	0.00491
TR		6	2.50 200 2.6e-200	8.8e-200	18	0.00583
FR		6	6 9e-200	1 4e-199	18	0.00483
MMS		5	4 2e-200	1 4e-199	15	0.00383
ho(t)	0.1	5	1.20 200	1.10 177	10	0.00505
NR	0.1	10	8 1e-201	8 1e-201	20	0.00385
SO		4	6.5e-201	2.4e-200	12	0.00384
ΔN		5	8.9e-201	4 1e-200	15	0.00385
S A		8	3.2e-201	7.10-201	24	0.00303
RS		8	$4.2e_{-201}$	$4.1e^{-201}$	24	0.00391
R.S R.A		5	$\frac{4.20-201}{2.4e-201}$	$4.1e_{-201}$	15	0.00392
KI		3	$4.2e^{-201}$	4.1e-201	0	0.00392
CH		5	4.20-200 8 9e-201	$4.1e_{-201}$	15	0.00323
TP		8	$3.2e_{-201}$	$2.4e_{-}201$	24	0.00300
FR		8	3.20-201 4.0e-201	$4.1e^{-201}$	24	0.00420
MMS		3	4.00-201 4.1e-201	4.1e-201	0	0.00407
WIND	12	5	4.10-201	4.10-201	,	0.00505
NR	1.2	10	8 1e-201	8 1e-201	20	0.00365
SO		10	6.50.201	2 40 200	12	0.00361
		4	4.80.201	2.4e-200	12	0.00301
S A		0	4.86-201	4.86-200	27	0.00387
DC		9	4.16-201	4.1e-201	27	0.00383
R.S R.A		1	4.20-201	$4.1e_{-201}$	12	0.00375
KI		4	4.1e-200	4.1e-201	12	0.00303
СН		5	8.9e-201	4.1e-201	15	0.00451
TR		8	3.2e-201	7.10-201	24	0.00303
FR		8	4.0e-201	4 1e-201	$\frac{24}{24}$	0.00432
MMS		3	4.0e-201	4 1e-201	9	0.00362
h 10(t)	0.7	5	1.00 201	1.10 201	-	0.00502
NR	0.7	12	3 1e-200	7.6e-200	24	0.00678
SO		12	Divergent	7.00 200	24	0.00070
AN		9	3 0e-200	7 6e-200	27	0.00603
SA		8	0	7.6e-200	24	0.00679
RS		9	3.2e-200	7.6e-200	27	0.00813
RA		11	6.6e-200	1.7e-199	33	0.00819
KI		10	9.3e-200	7.6e-200	30	0.00691
CH		8	6.8e-200	1.7e-199	24	0.00558
TR		7	5.2e-201	1.7e-199	21	0.00609
FR		11	6.5e-200	1.7e-199	33	0.00783
MMS		5	4.4e-200	7.6e-200	15	0.00546
	1.6	-				
NR		9	3.1e-200	7.6e-200	18	0.00484
SO		5	4.8e-200	1.7e-199	15	0.00676
AN		6	6.7e-200	1.7e-199	18	0.00391
SA		5	3.5e-200	7.6e-200	15	0.00441
RS		6	6.8e-200	1.7e-199	18	0.00570
RA		11	6.5e-200	1.7e-199	33	0.00761
KI		6	8.2e-200	1.6e-199	18	0.00485
СН		6	6.9e-200	1.7e-199	18	0.00391
TR		5	1.7e-200	7.6e-200	15	0.00536
FR		10	6.5e-200	1.7e-199	30	0.00393
MMS		4	6.4e-200	7.6e-200	12	0.00389

Where  $t_0$  is the initial approximation, *n* is the number of iterations and *NFE* is number of function evaluations.

The graphical behavior is reflected in "Fig. 1" to "Fig. 20". We use Origin Pro software for graphical comparisons.







Fig. 3.  $h_2(t)=0$  at  $t_0=0.1$ 



Fig. 4.  $h_2(t)=0$  at  $t_0=-1$ 















Fig. 13. h<sub>7</sub>(t)=0 at t<sub>0</sub>=1











Fig. 16.  $h_8(t)=0$  at  $t_0=3.3$ 



Fig. 17.  $h_9(t)=0$  at  $t_0=0.1$ 



Fig. 18.  $h_9(t)=0$  at  $t_0=1.2$ 



Fig. 19. h<sub>10</sub>(t)=0 at t<sub>0</sub>=0.7



Fig. 20. h<sub>10</sub>(t)=0 at t<sub>0</sub>=1.6

Figures 1-20 show the residual fall of iterative methods NR, SO, AN, SA, RS, RA, KI, CH, TR, FR and MMS. for simple roots for a nonlinear function  $h_1$ ,- $h_{10}$  respectively.

### V. CONCLUSIONS

We modified the proposed iterative technique by employing approximants of the second derivative to avoid calculating the higher derivatives of the function. As a result, we have a modified iterative approach that is free of the function's higher derivatives. The order of convergence of the method "(2.6)" has been proven to be four. With an efficiency score of 1.587, this method introduced the novel optimal fourth-order convergent iterative method. Two functional evaluations and one of the first derivatives are required. The efficiency of various approaches is compared in Table IV(b). The computational findings in table IV(c) and the graphical results in "Fig. 1" to "Fig. 20" show that the current approach MMS outperforms earlier methods in terms of CPU time for similar tasks. Other optimal fourthorder iterative methods were competitive with the current iterative strategy. As a result, the findings of the study make a significant contribution to the field of computational sciences.

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