Line-defec ! a e rn of n able ! ir al a e in car diac i e

[1,*] A [2]

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20 2008; 6 2008; 30 2009

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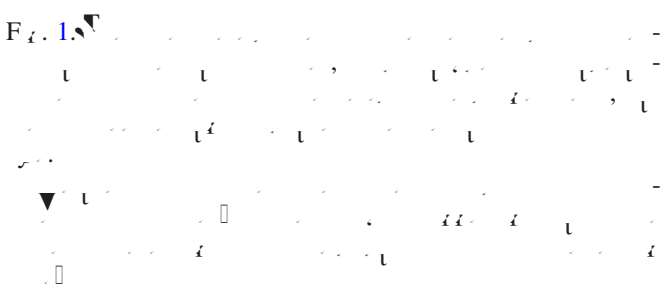
-1 -2



a

E . 2

, $= f'$, f',

$D^{n+1} = f\,T\ D^n$,

$D^{1/2}$, D

$= 0$,

a , t e^{t} r, E . 3

r, .

r, R r .

$_n$ = $n+1/2$, n $2n+1$

. B . F

r_i 0, $R_{n,m}$ r $J'_{n\ 1/2}$ $k_{n,m} r_e$ $J_{n+1/2}$ $k_{n,m} r$

$J'_{n+1/2}$ $k_{n,m} r_e$ $J_{n\ 1/2}$ $k_{n,m} r$

$\partial a|_{r_e} = 0$, $n, m = 0, 1, \ldots,$

$\partial_r a|_{r_i} = 0$ $k_{n,m}$,

,r

T,

r_i

C

[20].

. [20],

r_e=18

r_i=0.72

-2

. A

-2

. F

62.1 6-467.9 22.1 311.6 -31 7 /F2

$L=2\pi r_i$ [20,25].

. [17].

$a(r,jT)/a(r,0)$ j $\omega Tj+\beta$, β,
ω, β . F
, $a=e^{i\omega jT}$,
. [20],

$$e^{i\omega T}-1 \quad i/2\omega k=-1 \quad iwk \quad \beta^2k^2\omega f'(I)+i/2\omega k, \qquad (4)$$

$k=\omega/L+\omega T/L$
$\omega=c'(I)/2c^2$. A D C
$f(I)$ $c(I)$
. [20].
ω ω ω
$\omega 2\beta/c$ $\beta\omega\beta D^{1/2}$ [20]. F . 5