f he ag e ic la e = t_L. The le g h i a effec-
i e di a ce e hich he c e i a ed ai ai
a i di ec i al . The ag e ic la e i a ed
ha e i i e e e i he di ec i . Whe e efe he
egi a he a c ac , e ea he i i e
ega i e di ec i al g he a i .

We calc la e he i acc la i d e c e
h gh a fe ag e i g he a e e h d de c ibed i
Ref. 4. We c ide he beha i f he i acc la i i
he ag e i e e a if ag e i a i
$\vec{M}=M\vec{r}$, he e M i he a a i ag e i a i . A

$$\vec{J}(\;', \;') = \frac{I}{2\pi D_{,\;*}} F(\;')(H(\;' - t - t_{,})H(t + t_{,} + D_{,} - \;')$$

$$- H(- t_L - \;')H(\;' + t_L + D_{,}))$$

$$- \frac{I}{\pi \;_*^2} H(\;')H$$

i a e angle ψ_0 _90 . The t a el de ic he a ial
a ia i f a a ecific i e, and he l e a el h
he e e g de i f each a e. The e e g de i E , ϕ
i calc la ed b aki g he i e a e age f he a ed ag-
iF3.01 t deTBT9.978001009.978001226.714T607a i01226.7184TjETBT9.978001009.97800110191.8

di i ing fe enc

Thi [illegible]

$$\hat{r} = \frac{\vec{r}}{|\vec{r}|}, \quad \vec{r} = \frac{1}{\pi}\int_0^{2\pi}\int_0^1 \vec{r}(r', \phi', t)\, r'\, dr'\, d\phi', \qquad \text{(A2)}$$

[illegible] which [illegible] the [illegible] of the longitudinal [illegible] acceleration. The total [illegible] acceleration [illegible]

$$\vec{a}^* = \vec{a}^*_\perp + [\text{illegible}], \quad \vec{r}_\perp = \vec{r} - (\vec{r} \cdot \hat{r})\hat{r}, \qquad \text{(A3)}$$

where the longitudinal [illegible] acceleration [illegible] the [illegible] of the contribution [illegible] each interface $=0$ and $=t$.

For a uniform applied field [illegible] the form [illegible] $\sin\theta_* \cos\psi_*$, $\sin\theta_* \sin\psi_*$, $\cos\theta_*$, the dispersion relation for [illegible] change [illegible] wave [illegible] is

$$\omega^2 = [\eta\, k^2 + [\text{illegible}]_* \cos(\theta - \theta_*) - \cos^2(\theta)]$$

$$\times [\eta\, k^2 + [\text{illegible}]_* \cos(\theta - \theta_*) - \cos(2\theta)], \qquad \text{(A4)}$$

where θ is the equilibrium magnetization [illegible] angle satisfying [illegible] $\sin(\theta - \theta_*) - \frac{1}{2}\sin(2\theta) = 0$.

We briefly discuss the numerical method [illegible] used [illegible] Ref. [2]. The [illegible] coordinate [illegible] a [illegible] efficient and accurate choice for [illegible] interactions. The discretization [illegible] uniform in radius [illegible] and [illegible] grid [illegible] uniform in angle:

$$= [\text{illegible}] - 1/2) \quad \frac{1}{2}[\text{illegible}] + [\text{illegible}] - 1/2)$$

$$+ \frac{1}{2}[\text{illegible}] - [\text{illegible}] + [\text{illegible}] \ln$$

$$\times [\cosh [\text{illegible}] \frac{- \; + 1/2}{[\text{illegible}]}] [\cosh [\text{illegible}]]$$

$$\vec{v}_\perp = \int_0^{2\pi}\int_0^1 \frac{a(\ldots)\vec{r}'_\perp - a(1+\ldots)\ln(\ldots)/(\ldots)\vec{r}_\perp}{\ldots}\, r'\, dr'\, d\phi'$$

$$+\, a 4E(\ldots)^2 \vec{r}_\perp + \frac{a}{-}\vec{r}_\perp \int_0^{2\pi}\int_0^1 \ln(\ldots)\, r'\, dr',$$

$$\vec{r}'_\perp = \vec{r}_\perp(r', \phi', \tau), \quad \vec{r}_\perp = \vec{r}_\perp(r, \phi, \tau),$$

where $4E(\ldots)^2 = \int_0^{2\pi}\int_0^1 r'/\ldots\, dr'\, d\phi'$ and E is the complete elliptic integral of the second kind.