



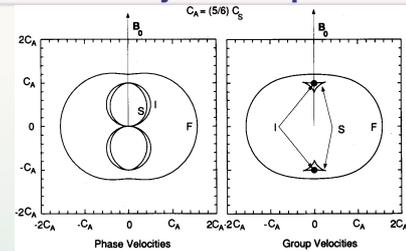
## 2-D MHD Waves

L. H. Lyu

Institute of Space Science, National Central University  
Chung-Li, Taiwan, R. O. C.



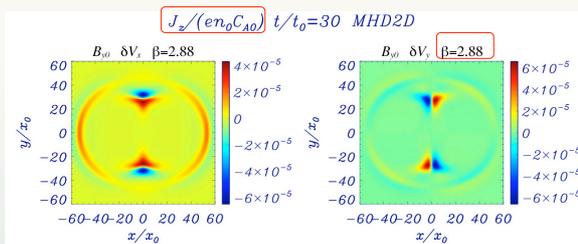
## Fredricks Diagrams of the MHD Waves Phase Velocity & Group Velocity



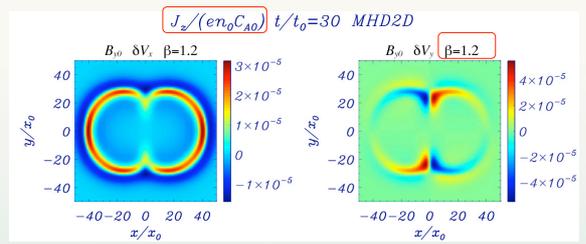
$$(r, \theta) = (v_p, \theta_{k, B_0}) \quad (r, \theta) = (v_g, \theta_{v, B_0})$$



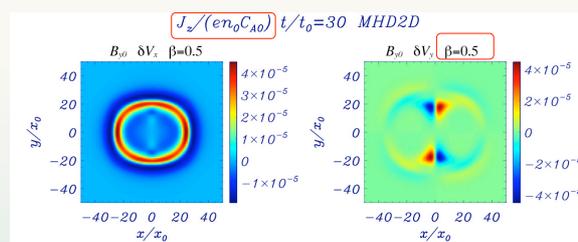
## Small-Amplitude MHD Wave Simulations



## Small-Amplitude MHD Wave Simulations



## Small-Amplitude MHD Wave Simulations



## Small-Amplitude MHD Wave Simulations

