

Abstract Submitted
for the DPP10 Meeting of
The American Physical Society

**Gyrokinetic Particle Simulation Of Drift Compressional Modes
In Magnetic Dipole Geometry** PETER PORAZIK, ZHIHONG LIN, UC Irvine

— The Pc5 magnetic pulsations dominated by compressional modes have been regularly observed in the Earth's magnetosphere. The objective of this project is to study the linear excitation and nonlinear evolution of these ultra low frequency pulsations, focusing on unstable drift compressional modes, with kinetic effects due to wave-particle resonance and finite Larmor radius. The method is to develop a three dimensional gyrokinetic particle simulation, with the dipole equilibrium field modelling the Earth's magnetosphere. Results of linear drift-kinetic and linear gyrokinetic simulations will be presented. The current code development is focused on resolving the radial mode structure due to finite Larmor radius effects.

Peter Porazik
UC Irvine

Date submitted: 16 Jul 2010

Electronic form version 1.4