

Abstract Submitted  
for the DPP06 Meeting of  
The American Physical Society

**The solar coronal electron heating by short wavelength electromagnetic modes** P.K. SHUKLA, Institut für Theoretische Physik IV, Bochum, Germany, R. BINGHAM, Rutherford Appleton Laboratory — The electron heating of the solar coronal plasma has remained as one of the most important problems in solar physics. An explanation of the electron heating rests on the identification of the energy source and appropriate physical mechanisms via which the energy can be channelled to the electrons. Our objective here is to present an estimate for the electron heating rate in the presence of finite amplitude short wavelength (in comparison with the ion gyroradius) dispersive electromagnetic (SWDEM) waves that propagate obliquely to the magnetic field in the solar corona. Specifically, it is demonstrated that the SWDEM waves can significantly contribute to the solar coronal electron heating via Joule heating involving electron-SWDEM wave interactions.

Robert Bingham  
Rutherford Appleton Laboratory

Date submitted: 22 Jul 2006

Electronic form version 1.4