

NON-LINEAR INTERACTIONS OF PLASMA WAVES IN THE CONTEXT OF SOLAR PARTICLE ACCELERATION

A. Gallegos-Cruz (1) and **J. Pérez-Peraza** (2)

(1) Ciencias Básicas, UPIICSA, I.P.N., Te 950, Iztacalco, 08400, México D.F., MÉXICO, (2) Instituto de Geofísica, UNAM, 04510, C.U., Coyoacan, México D.F., MÉXICO.

Stochastic particle acceleration in plasmas by means of MHD turbulence involves a wide range of alternatives according to, the specific wave mode, the frequency regime of the turbulence, the kind of particles to be accelerated, the assumed plasma model and so on. At present most of the alternatives have been studied with relatively deepness, though some features are not yet completely understood. One of them is the delimitation of the real importance of non-linear effects of turbulence waves in the process of particle acceleration. In this work we analyse such effects taking into account the temporal evolution of the turbulence. For illustration we exemplify our analysis with the fast MHD mode. Our results show that in some specific stages of the turbulence evolution, non-linear interactions have important effects in the process of particle acceleration.