

Abstract Submitted
for the DPP06 Meeting of
The American Physical Society

Generation of secondary whistler emissions¹

ANATOLY STRELTSOV, GURUDAS GANGULI, MARTIN LAMPE, Naval Research Laboratory, GLENN JOYCE, K. DENNIS PAPADOPOULOS, University of Maryland, WALLY MANHEIMER, Sachs-Freeman Assoc. Inc. — We present initial results from a numerical study of whistler wave generation in the radiation belt plasma by energetic electrons. The long-term goal of this investigation is to understand the mechanisms of triggering of intense secondary waves by an initial whistler. This phenomenon has been observed in a number of experiments performed on the SIPLE station in Antarctica. These observations show that the triggering depends in a complex way on the frequency and amplitude of the pump wave, and on the conditions of the ambient plasma and the geomagnetic field as well. Thus to get new insight into this problem a comprehensive numerical model has been developed and simulations of wave-particle interactions have been performed for different parameters of the energetic particles distribution function and pump wave.

¹Supported by ONR

Glenn Joyce
NRL

Date submitted: 17 Jul 2006

Electronic form version 1.4