

Abstract Submitted
for the APR06 Meeting of
The American Physical Society

Acceleration of a Train of Micro-Bunches Moving in a Dilute Resonant Active Medium¹ LEVI SCHACHTER, Technion – IIT — Adapting the frequency of a train of micro-bunches, injected into a resonant medium to the resonance of the latter, leads to an effective interaction between the electrons and the medium. Of particular interest is the case when the medium is active i.e. it stores energy since the train of micro-bunches may be accelerated. If the bandwidth of the resonant line is much narrower than that associated with the interference pattern of electromagnetic field of the M micro-bunches, then the energy transferred is independent of the number of micro-bunches. Implying that all the bunches are uniformly accelerated.

¹This study was supported by the Israel Science Foundation and the US DoE

Levi Schachter
Technion – IIT

Date submitted: 13 Jan 2006

Electronic form version 1.4