

Particle acceleration in cosmic plasmas, paradigm change?

Friday

February 13

2:00 P.M.

Rm 118 NSH

Prof. Maxim Lyutikov, Purdue University

I will discuss an intriguing possibility that (some) particles producing high energy emission in astrophysical sources are accelerated at reconnection events in highly magnetized relativistic plasmas (and not at the shocks). Concentrating on the recently discovered flares from the Crab nebula, I will discuss an initial slow accumulation of magnetic energy followed by the explosive collapse on Alfvén (light travel) time scales, development of high electric field regions, and efficient acceleration of particles on macroscopic scales.