

# The Beams and Applications Seminar Series

## Fermilab electron cooling project Sergei Nagaitsev (FNAL)

Friday, Dec. 5, 1:30 PM  
Bldg. 401, Room B2100

Host: Wei Gai

In 1995 Fermilab started to investigate the application of electron cooling to 8.9 GeV/c antiprotons in the Recycler ring as a promising component of a Tevatron luminosity upgrade. Purposes of a Recycler beam cooling system (stochastic or electron) are:

1. To aid beam stacking in the Recycler during transfers from the Accumulator;
2. To counteract various beam heating mechanisms, such as residual-gas and intra-beam scattering.

To date, electron cooling at relativistic energies remains an unproven technology, and thus constitutes a high-risk segment of the luminosity upgrade plan. To address the R&D issues and to achieve the required system parameters Fermilab has created an electron cooling R&D facility at one of the fixed-target lab buildings. In this talk I will present the results of the on-going R&D program as well as our plans for the cooling system installation and commissioning.

### For more information visit

<http://www.aps.anl.gov/asd/physics/seminar.html>

Visitors from off-site please contact John Power  
([jp@anl.gov](mailto:jp@anl.gov), 630-252-3191) to arrange for a gate pass.

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