

**Phase Modulation Induced Particle Diffusion\***,  
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T. SLOAN, IUCF; K.Y. NG, FERMILAB;  
M. SYPHERS, BNL - Experiment measurement of particle  
diffusion by employing phase modulation to the rf system  
has been carried out at the IUCF Cooler ring. We measured  
the evolution of the mountain range, and deduce the rms  
value of the bunch profile. Our data shows that global  
chaos plays a dominant role in the particle diffusion  
mechanism.

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