Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Temporally heterogeneous dynamics in granular flows
LEONARDO SILBERT, University of Chicago — Granular simulations are used to probe the particle scale dynamics at short, intermediate, and long time scales for gravity driven, dense granular flows down an inclined plane. On approach to the angle of repose - the jamming point - the dynamics become intermittent over intermediate times, with strong temporal correlations between particle motions - a signature of *temporally heterogeneous* dynamics. This intermittency is characterised through large scale structural events whereby the contact network periodically spans the system. A characteristic time scale associated with these processes increases as the stopped state is approached. These features are discussed in the context of the dynamics of supercooled liquids near the glass transition.

Leonardo Silbert
University of Chicago

Date submitted: 01 Dec 2004 Electronic form version 1.4