

MODELING OF ELECTRODYNAMIC SUSPENSION SYSTEMS

Nam Ho Kim – Department of Mechanical Engineering
Long Ge – Department of Mechanical Engineering

UNIVERSITY OF FLORIDA

Proceedings of IDETC/CIE 2006

**ASME 2006 International Design Engineering Technical Conferences &
Computers and Information in Engineering Conference**

September 10-13, 2006, Philadelphia, Pennsylvania

DETC2006-99122

ABSTRACT

Characteristics of magnetic-levitation system are studied using dynamic models that include motion-dependent lift, drag, slip, and roll motions. In addition, the contact constraint between the vehicle and the track is modeled using the penalty method. Unknown numerical parameters are identified using the optimization technique. The numerical tests are focused on the damping characteristic, stability in lifting and slip motions, the lifting efficiency compared with the concentric force, and contact with track.

Kim, N.H., Ge, L., (September, 2006), " Modeling of Electrodynamic Suspension Systems," ASME 2006 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, September 10-13, 2006, Philadelphia, Pennsylvania.