Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Spin drag in noncondensed Bose gases REMBERT DUINE, Utrecht University — We show how time-dependent magnetic fields lead to spin motive forces and spin drag in a spinor Bose gas. We propose to observe these effects in a toroidal trap and analyze this particular proposal in some detail. In the linear-response regime we define a transport coefficient that is analogous to the usual drag resistivity in electron bilayer systems. Due to Bose enhancement of atom-atom scattering, this coefficient strongly increases as temperature is lowered. We also investigate the effects of heating.

Rembert Duine
Utrecht University

Date submitted: 22 Nov 2009 Electronic form version 1.4