

Abstract Submitted  
for the SES05 Meeting of  
The American Physical Society

**Two Dimensional Fluid Flow in a Barred Galaxy Potential** LEE  
CULVER, GARY HUNTER, JAMES ESPINOSA, JULIE TALBOT, University of  
West Georgia, PAUL FISHER, JAMES WOODYARD, West Texas A&M Univer-  
sity — We describe two-dimensional models for near-steady state gas flow in a bar  
potential. Such models serve as a first step in describing the thin disks of barred  
galaxies. Realistic three-dimensional models of barred galaxies remain a challenge to  
existing theory and so we proceed by thoroughly testing our tools in limited cases as  
we increase the complexity of the model. Our model begins with a steady-state so-  
lution of the hydrodynamic equations based upon the Hachisu Self-Consistent Field  
Technique and compares the resulting motions of the gas to that of stars determined  
by traditional integrations.

James Espinosa  
University of West Georgia

Date submitted: 04 Aug 2005

Electronic form version 1.4