

Abstract Submitted  
for the DFD10 Meeting of  
The American Physical Society

**Spatially localized solutions of plane Couette flow**<sup>1</sup> JOHN GIBSON,  
University of New Hampshire, TOBIAS SCHNEIDER, Harvard University, JOHN  
BURKE, Boston University — We examine spatially localized solutions of plane  
Couette flow: traveling waves and equilibria with finite spanwise extent and peri-  
odic streamwise structure. We show that these solutions exist over a wide range  
of Reynolds numbers, from  $Re=170$  to at least  $Re=4000$ , and demonstrate a rela-  
tionship between the streamwise periodicity of a solution and the range of Reynolds  
number over which it appears. Some solutions display a diagonal or winding sym-  
metry, suggestively similar to the diagonal bands of structure observed in large-scale  
simulations by Tuckermann and Barkley.

<sup>1</sup>Partially supported by NSF grant DMS-0807574.

John Gibson  
University of New Hampshire

Date submitted: 09 Aug 2010

Electronic form version 1.4