Spatially localized solutions of plane Couette flow\(^1\) 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 periodic streamwise structure. We show that these solutions exist over a wide range of Reynolds numbers, from \(\text{Re}=170\) to at least \(\text{Re}=4000\), and demonstrate a relationship between the streamwise periodicity of a solution and the range of Reynolds number over which it appears. Some solutions display a diagonal or winding symmetry, suggestively similar to the diagonal bands of structure observed in large-scale simulations by Tuckermann and Barkley.

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