

**Meeting:** 999, Nashville, Tennessee, SS 11A, Special Session on Nonlinear Partial Differential Equations and Applications

999-76-143            **David M. Ambrose\*** ([ambrose@cims.nyu.edu](mailto:ambrose@cims.nyu.edu)), 251 Mercer St., New York, NY 10012, and  
**Nader Masmoudi.** *The zero surface tension limit of 2D water waves.*

In earlier work, I have demonstrated the well-posedness of 2D vortex sheets with surface tension. A special case of this result is the well-posedness of irrotational 2D water waves with surface tension. The proof uses energy estimates which depend on the amount of surface tension. Recently, Nader Masmoudi and I have found new estimates which are uniform in surface tension. By taking the limit as surface tension goes to zero, we find a new existence proof for 2D irrotational water waves. (Received August 20, 2004)