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Florentina Tone* (ftone@uwf.edu), Department of Mathematics and Statistics, University of West Florida, 11000 University Parkway, Pensacola, FL 32514. *On the long time stability of the implicit Euler scheme for the 2d space-periodic Navier-Stokes equations.*

In this talk we discretize the two-dimensional space-periodic Navier-Stokes equations in time using the implicit Euler scheme and, with the aid of the discrete Gronwall lemma and the uniform discrete lemma, we prove that the scheme is H2-uniformly stable in time. (Received February 13, 2009)