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Cesar J. Niche* (cniche@impa.br), IMPA, Estrada Dona Castorina 110, Rio de Janeiro, RJ 22460-320, Brazil, and **Maria E. Schonbek**. *Decay of weak solutions to the 2D dissipative quasi-geostrophic equation.*

The 2D dissipative quasi-geostrophic equation (DQGE) models ocean and atmosphere circulation under special assumptions. From the mathematical point of view, it is also interesting because the critical DQGE provides a 2D analog to the 3D Navier-Stokes equations. In this talk, we describe joint work concerning uniform and non-uniform decay in different norms of weak solutions to the sub-critical DQGE. (Received December 15, 2007)