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Florentina Tone* (ftone@uwf.edu), University of West Florida, Department of Mathematics and Statistics, Pensacola, FL 32514, and **Xiaoming Wang**, Florida State University, Department of Mathematics, Tallahassee, FL 32306. *On the long-time stability of a semi-implicit Euler scheme for the 2d thermohydraulics equations.*

In this talk we will discuss the H1-stability for all positive time of a semi-implicit Euler scheme for the 2d thermohydraulics equations. More precisely, we will discretize the 2D thermohydraulics equations in time using a semi-implicit Euler scheme and with the aid of a discrete Gronwall lemma and of a discrete uniform Gronwall lemma, we will prove that the numerical scheme is unconditionally stable (uniformly in time). (Received September 12, 2011)