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Tao Huang* (thuang@ms.uky.edu) and **Changyou Wang**. *Regularity and uniqueness of the heat flow of biharmonic maps.*

We first establish regularity of the heat flow of biharmonic maps into the unit sphere $\mathbb{S}^L \subset \mathbb{R}^{L+1}$ under a smallness condition of renormalized total energy. For the class of such solutions to the heat flow of biharmonic maps, we prove the properties of uniqueness, convexity of hessian energy, and unique limit at $t = \infty$. We establish both regularity and uniqueness for Serrin's (p, q) -solutions to the heat flow of biharmonic maps into any compact Riemannian manifold N without boundary. (Received August 29, 2012)