1054-53-37   **Ye-Lin Ou*** (`yelin_ou@tamu-commerce.edu`), Department of Mathematics, Texas A & M University-Commerce, P. O. Box 3011, Commerce, TX 75429. *Some constructions of biharmonic maps.*

Biharmonic maps are critical points of the bi-energy functional. Harmonic maps are automatically biharmonic and we call those non-harmonic biharmonic maps proper biharmonic maps. Examples of proper biharmonic maps are difficult to find. In this talk, we will first review some fundamental problems in the study of biharmonic maps, some known examples of proper biharmonic maps, and we will then present several methods that can be used to construct many new examples of proper biharmonic maps including biharmonic flat tori of any dimension in spheres, a family of biharmonic conformal immersions of cylinder into Euclidean 3-space, a foliation of proper biharmonic hypersurface in a conformally flat space, and some biharmonic maps between surfaces. (Received August 17, 2009)