1125-30-806 **Tao Cheng**, **Huiqiang Shi** and **Shanshuang Yang*** (syang@mathcs.emory.edu), Department of Math and CS, Emory University, Atlanta, GA 30322. *Sewing homeomorphisms and conformal invariants.* Preliminary report.

For a Jordan domain Ω in the extended complex plane $\overline{\mathbb{C}}$, let f_1 and f_2 map Ω and $\Omega^* = \overline{\mathbb{C}}\backslash\overline{\Omega}$ conformally onto the unit disk $\mathbb{D}$ and $\mathbb{D}^* = \overline{\mathbb{C}}\backslash\overline{\mathbb{D}}$, respectively. Extending f_1 and f_2 homeomorphically to the boundary, one can define a homeomorphsm of the unit circle as $h_\Omega = f_2 \circ f_1^{-1}|_{\partial\mathbb{D}}$, which is called a *sewing homeomorphism* induced by the Jordan domain Ω. In this talk, we explore some connections between the analytic properties of the sewing homeomorphism h_Ω and the geometric properties of a Jordan domain Ω. In particular, using conformal invariants such as harmonic measure, extremal distance, and reduced extremal distance, we give several necessary and sufficient conditions for the sewing homeomorphism to be bi-Lipschitz or bi-Hölder. (Received September 12, 2016)