1120-60-95 **Michael Damron***, Georgia Institute of Technology, School of Mathematics, 686 Cherry St., Atlanta, GA 30332, and **Xuan Wang** and **Wai-Kit Lam**. *Asymptotics for 2D critical first-passage percolation.*

In first-passage percolation, we consider the integer lattice $\mathbb{Z}^d$ with nonnegative, i.i.d. edge-weights (t_e), and study the induced weighted graph metric T. As long as $\alpha := \mathbb{P}(t_e = 0)$ is small, the quantity $T(0, x)$ grows linearly as $x \to \infty$. If α is too large, then $T(0, x)$ remains bounded stochastically. In the so-called critical case between these two regimes, the behavior of $T(0, x)$ is unknown. I will report on work with Xuan Wang and Wai-Kit Lam where, in two dimensions, we can exactly quantify the growth of $T(0, x)$ (and derive limiting laws) in this critical case, in terms of the distribution of t_e, answering questions of Zhang and Kesten-Zhang from the '90s. (Received February 15, 2016)