1143-60-28 **Joel A. Tropp*** (jtropp@cms.caltech.edu), 1200 E. California Blvd., MC 305-16, Pasadena, CA 91125, and **Samet Oymak** (oymak@ece.ucr.edu), Suite 343 Winston Chung Hall, 900 University Ave., Riverside, CA 92521. *Universality laws in geometric random matrix theory.*

A basic problem in geometry is to understand the probability that a uniformly random subspace of a given codimension intersects a fixed convex set. The hitting probability exhibits a phase transition as the codimension of the subspace increases. That is, the probability changes rapidly from one to zero when the codimension reaches the "statistical dimension," a geometric invariant of the convex set.

The focus of this talk is a new universality law in random matrix theory connected to this geometric problem. For a fixed convex set, the location of the phase transition is universal over a large class of random subspaces that are constructed as the kernels of random matrices. (Received June 25, 2018)