1137-31-24 **Murat Akman*** (murat.akman@uconn.edu), 341 Mansfield Road, University of Connecticut, Storrs, CT 06269. *A Minkowski problem for nonlinear capacity.*

The classical Minkowski problem consists in finding a convex polyhedron from data consisting of normals to their faces and their surface areas. In the smooth case, the corresponding problem for convex bodies is to find the convex body given the Gauss curvature of its boundary, as a function of the unit normal. The proof consists of three parts: existence, uniqueness and regularity.

In this talk, we study a Minkowski problem for certain measure associated with a compact convex set E with nonempty interior and its $\mathcal{A}-$harmonic capacitary function in the complement of E. Here $\mathcal{A}-$harmonic PDE is a non-linear elliptic PDE whose structure is modeled on the p-Laplace equation. If μ_E denotes this measure, then the Minkowski problem we consider in this setting is that; for a given finite Borel measure μ on $\mathbb{S}^{n-1}$, find necessary and sufficient conditions for which there exists E as above with $\mu_E = \mu$. We will discuss the existence, uniqueness, and regularity of this problem in this setting. (Received January 09, 2018)