Shoo Seto* (shoseto@ucsb.edu). The first eigenvalue of the \( p \)-Laplacian with integral curvature condition.

The \( p \)-Laplacian is a generalization of the usual Laplacian by minimizing the \( L^p \) energy functional instead of the \( L^2 \) energy. While the regularity of solutions to the \( p \)-Laplace eigenvalue equation is different for \( p \neq 2 \), its first nonzero eigenvalue admits generalizations. In this talk, we will discuss various sharp estimates of the first nonzero eigenvalue for the \( p \)-Laplacian with integral curvature condition. In particular, we generalize the Cheng upper bound, the Lichnerowicz-Obata lower bound, and the Faber-Krahn isoperimetric inequality. This is based off joint work with Guofang Wei. (Received September 16, 2017)