Nonlinear Eigenvalue Problems

Eigenvalue problems are at the core of computation for many applications in science and engineering. In this talk we review the standard eigenvalue problem and discuss several generalizations to nonlinear problems, their applications, and the most common method for solving them. We will then turn our attention to inverse problems and how solutions to inverse problems can give rise to new theory. Mixed in will be some highlights from my past work as well as some spoilers for my ongoing projects.