Keivan Hassani Monfared* (k1monfared@gmail.com) and Bryan Shader. Using the Jacobian method to solve structured inverse eigenvalue problems.

For a family of matrices $\mathcal{F}$ we want to find a matrix $A \in \mathcal{F}$ such that $A$ satisfies some spectral properties $\mathcal{P}$, e.g. when $\mathcal{F}$ is the set of real symmetric matrices whose graph is a given graph $G$, and $\mathcal{P}$ is the property of having a spectrum $\Lambda$.

In this talk, we will illustrate when we have a solution for a graph $G$, how some genericity conditions enable us to use the Jacobian method to add in edges and find a solution for the new graph $\hat{G}$. (Received September 22, 2015)