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**Eigenvalue path-following for large scale second order systems**

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Abstract:

*The final goal of the diploma thesis is, to detect all eigenvalues and vectors of large scale second order system in a specified area in  $\mathbb{C}$ . Therefore I will use a homotopy method over parts of the damping and coupling matrix. For the path-following problem we have to consider perturbation and bifurcation theory as well as general eigenanalysis.*

*In this talk I will focus on incoming eigenvalues as well as path jumping. Also I will compare different estimation techniques and I will show results for 3 different initial systems.*