

# Applied Dynamical Systems Seminar

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**Monday, November 17, 2014  
10:00 - 11:00 a.m., HH-3026**

## **Generalized Asymptotic Expansions for Singularly Perturbed BVPs**

### **Abstract:**

Matched asymptotic expansions have been widely applied to problems arising in various fields of sciences and engineers. Though with great success, such conventional method also causes considerable issues when exponentially small terms are ignored. In this talk, we consider a nonlinear two-point BVP with a small parameter. This problem covers a number of examples (e.g., Carrier's problem) that have been studied previously. We want to provide a uniform asymptotic expansions containing multi-scaled small terms. The results are proved rigorously and we intend to provide asymptotic expansions for singularly BVPs with mathematical rigor.