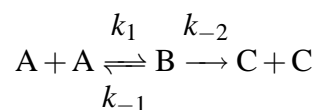


# Chemistry 5850 Fall 2005 Assignment 6

Due: Monday, October 31.

Weight of this assignment: 45 marks

1. Obtain conditions for the validity of the steady-state approximation (SSA) in the mechanism



using a scaling argument. [20 marks]

2. Prove that the SSA is a stable solution of the adjoined system for this mechanism. [5 marks]
3. Obtain a singular perturbation series for the slow or centre manifold which the SSA approximates. [20 marks]

**Bonus:** Develop a power-series solution for the slow/centre manifold using the techniques of lecture 5. Does this series agree with your singular perturbation series? Explain.