

1135-92-1934      **Bin Xu\*** (bxu2@nd.edu), ACMS Department, 153 Hurley Hall, Notre Dame, IN 46556. *Modeling the dynamics of Cdc42 oscillation in fission yeast.*

We present a mathematical model of the core mechanism responsible for the regulation of polarized growth dynamics during the fission yeast cell cycle. The model is based on the competition of growth zones of Cdc42 localized at the cell tips for a common GEF distributed uniformly in the cytosol. We consider several potential ways of implementing negative feedback between Cdc42 and its GEF in this model that would be consistent with the observed oscillations of Cdc42 in fission yeast. We analyze the bifurcations in this model as the cell length increases and the total amount of Cdc42 increases. (Received September 25, 2017)