

Meeting: 1003, Atlanta, Georgia, SS 28A, AMS-SIAM Special Session on Reaction Diffusion Equations and Applications, I

1003-35-1694 **Jin-guo Lian*** (lian@math.uab.edu), Department of Mathematics, University of Alabama, Birmingham, AL 35294. *Periodic Pattern formation in the Gray-Scott model* .

We study a parabolic system with periodic coefficients which extends Gray-Scott model of cubic autocatalytic reaction. We focus mainly self-replicating pattern of stripes. In particular, we find a strictly positive invariant region for the extended CSTR model in which the periodic solution to the extended CSTR model is unique and we also show the stability and bifurcation of the periodic solution. (Received October 09, 2004)