1014-34-553 **Maria C.A. Leite*** (`mleite@math.purdue.edu`), West Lafayette, IN, and **Martin Golubitsky** (`mg@math.uh.edu`). *Networks of Three Identical Coupled Systems.*

Homogeneous three-cell networks are networks of three identical coupled systems of ODE's. We consider networks where each system of ODE's has at least two couplings. We show that there are 34 distinct homogeneous three-cell networks as opposed to only three such two-cell networks. We also classify the kinds of transitions from *a synchronous equilibrium* that can occur as we vary one parameter and we show that they are determined by the coupling structure of the network. (Received September 20, 2005)