

1116-Z1-866

Amy Veprauskas* (aveprauskas@math.arizona.edu) and **J M Cushing**. *Evolutionary Dynamics of a Multi-trait Semelparous Model*.

We consider a multi-trait evolutionary (game theoretic) version of a two class (juvenile-adult) semelparous Leslie model. Unlike matrix models with primitive projection matrices, semelparous Leslie models have imprimitive projection matrices. Consequently, the direction of bifurcation does not solely determine the stability of a bifurcating continuum. When the net reproductive number R_0 increases through 1, the extinction equilibrium destabilizes resulting in the simultaneous bifurcation of both a continuum of positive equilibria and a continuum of synchronous 2-cycles. Only forward bifurcating branches can be stable and which of the two is stable depends on the intensity of between-class competitive interactions. We give criteria for the direction of bifurcation and for the stability or instability of each bifurcating branch in this evolutionary setting. These results generalize earlier results for single trait models. (Received September 14, 2015)