1163-92-869   **Azmy S. Ackleh*** (`azmy.ackleh@louisiana.edu`), Department of Mathematics, University of Louisiana at Lafayette, Lafayette, LA 70504-1010, **Paul Salceanu** (`paul.salceanu@louisiana.edu`), Department of Mathematics, University of Louisiana at Lafayette, Lafayette, LA 70504-1010, and **Amy Veprauskas** (`amy.veprauskas@louisiana.edu`), Department of Mathematics, University of Louisiana at Lafayette, Lafayette, LA 70504-1010.
Global stability and bifurcation results for discrete-time predator-prey models.

We consider a two-dimensional discrete-time predator-prey model that was developed by Ackleh et. al in 2019. Utilizing an approach which is based on nullcline analysis, we derive conditions for the global stability of the interior equilibrium. Then, we study a three-dimensional evolutionary counterpart developed in Ackleh et. al (2019) which couples the population dynamics with the dynamics of an evolving phenotypic trait. We extend the global stability results to the interior equilibrium of the three-dimensional predator-prey model with frequency-independent evolution. We also show that when evolution in the prey is frequency-dependent then a Neimark-Sacker bifurcation is possible. (Received September 13, 2020)