1165-37-14 **William T Jamieson*** (w.jamieson@snhu.edu), 2500 North River Road, Manchester, NH 03106.
Global behavior of the LPA model when $c_{PA} = 0$.

In 1995, Dennis, Desharnais, Cushing, and Costantino proposed and analyzed an age-structured system of difference equations describing the flour beetle *Tribolium castaneum*:

$$\begin{aligned} L_{t+1} &= b\,A_t e^{-c_{EA}A_t - c_{EL}L_t} \\ P_{t+1} &= (1-\mu_L)L_t \qquad\qquad , \quad L_0, P_0, A_0 \geq 0. \\ A_{t+1} &= P_t\, e^{-c_{PA}A_t} + (1-\mu_A)A_t. \end{aligned} \tag{1}$$

The sequences L_t, P_t and A_t describe the flour beetle populations in the larval, pupal, and adult stages, respectively. In system (**??**), b is the average number of viable eggs laid by a single adult. The parameters $0 \leq \mu_A, \mu_L \leq 1$ are mortality rates for larvae and adults. It is assumed that various stages of flour beetle cannibalize each other, where the chance of being cannibalized is governed by a Poisson distribution in the number of available cannibals. $c_{EA}, c_{EL}, c_{PA} \geq 0$ are cannibalism coefficients for eggs by adults, eggs by larvae, and pupa by adults. In the case when there is no cannibalism of pupa by adults, sufficient conditions for the global attractivity of a unique positive fixed point will be provided. (Received December 31, 2020)