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# Bifurcation Analysis of Predator-Prey Systems with Constant Rate Harvesting Using Non-Standard Discretization

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**Color figures available:**

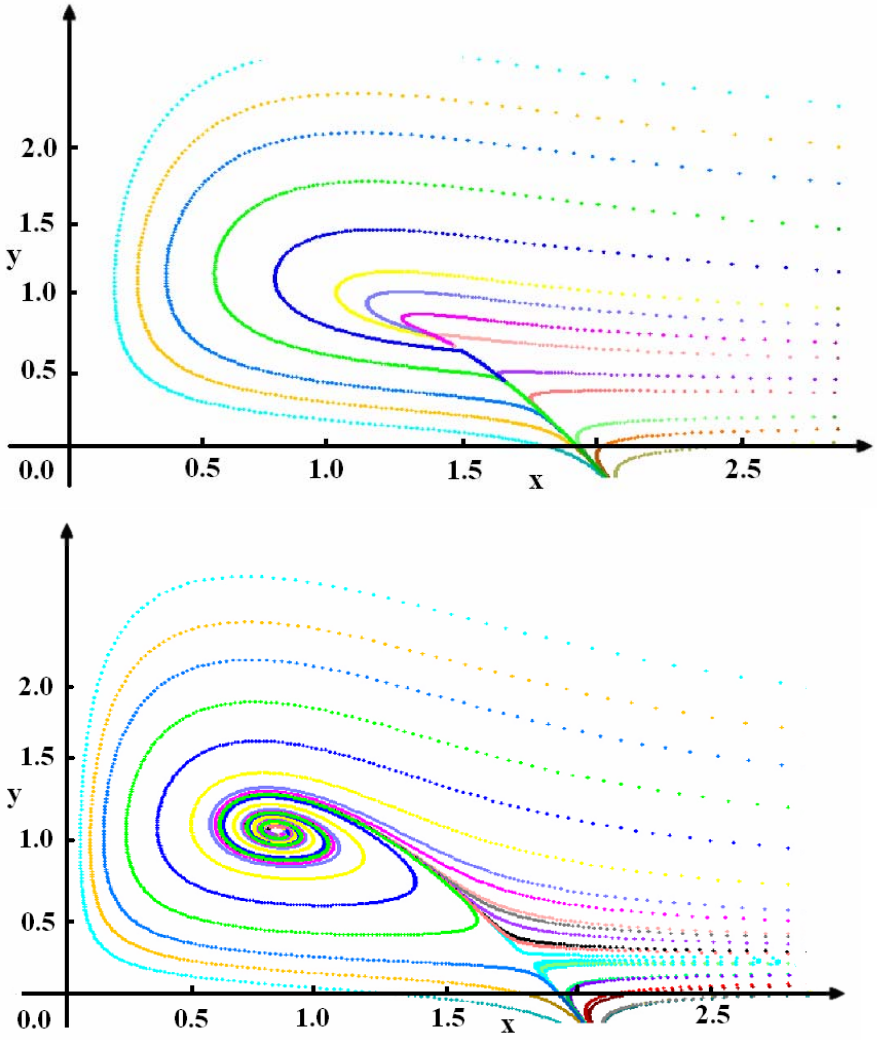


**Fig. 2.** (a) Unstable saddle-node at bifurcation parameters $d$ = 0.5 and $h$ = 0.0625, corresponding to the Fig. 1a. (b) Two positive fixed points at bifurcation parameters $d$ = 0.4 and $h$ = 0.06, a focus and a saddle, respectively, corresponding to the Fig. 1b.

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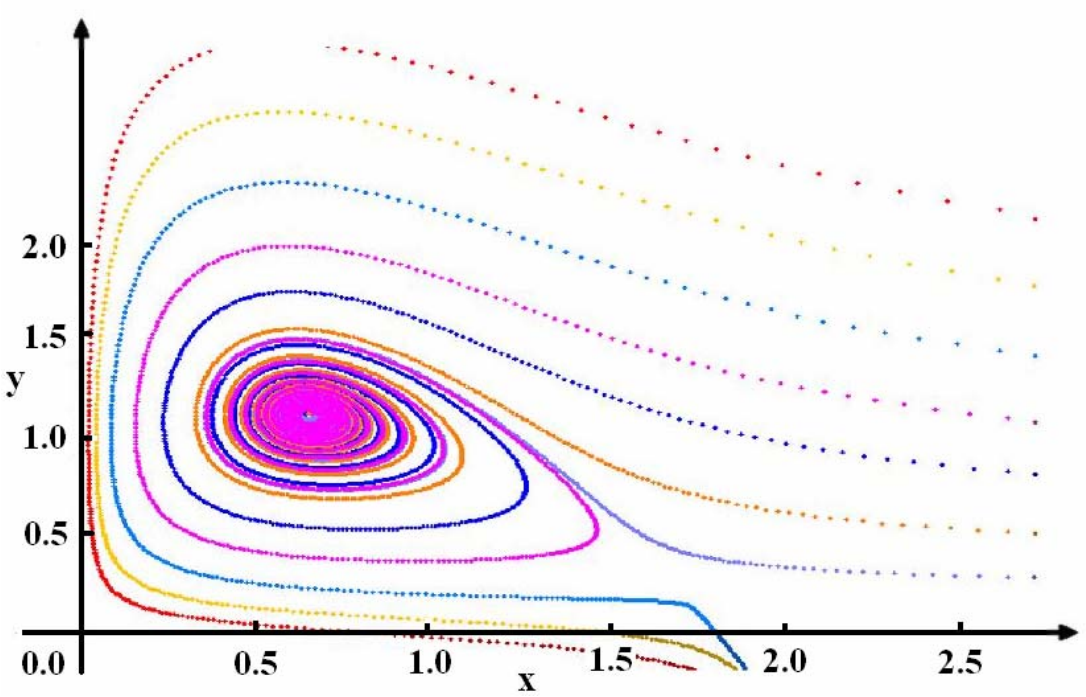
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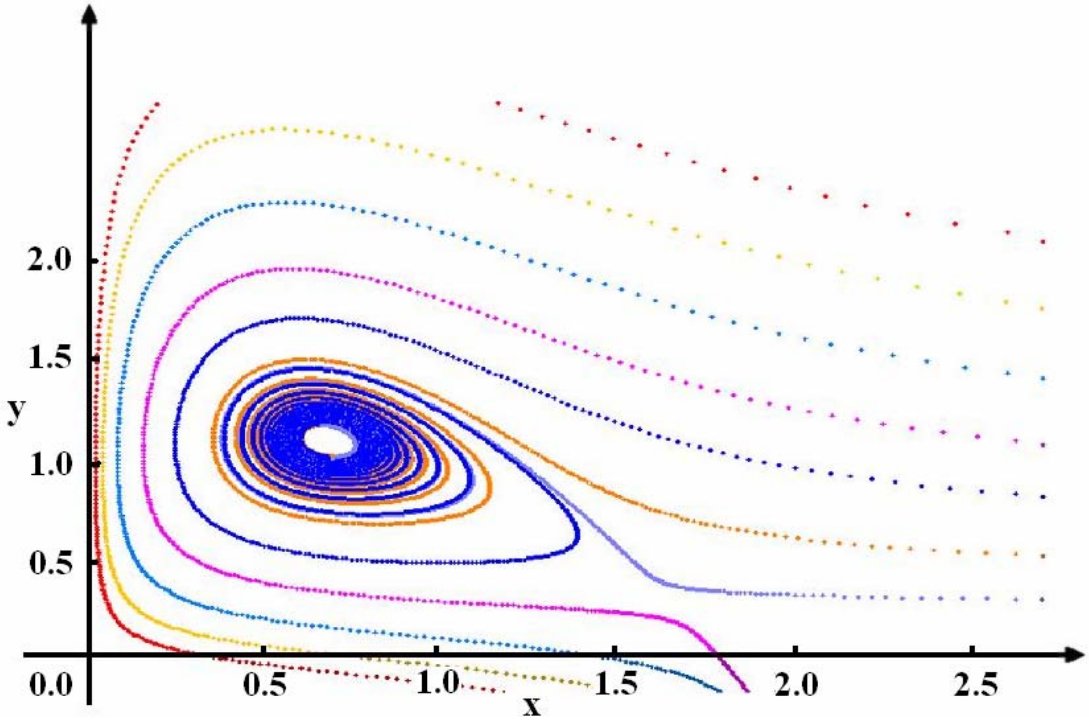
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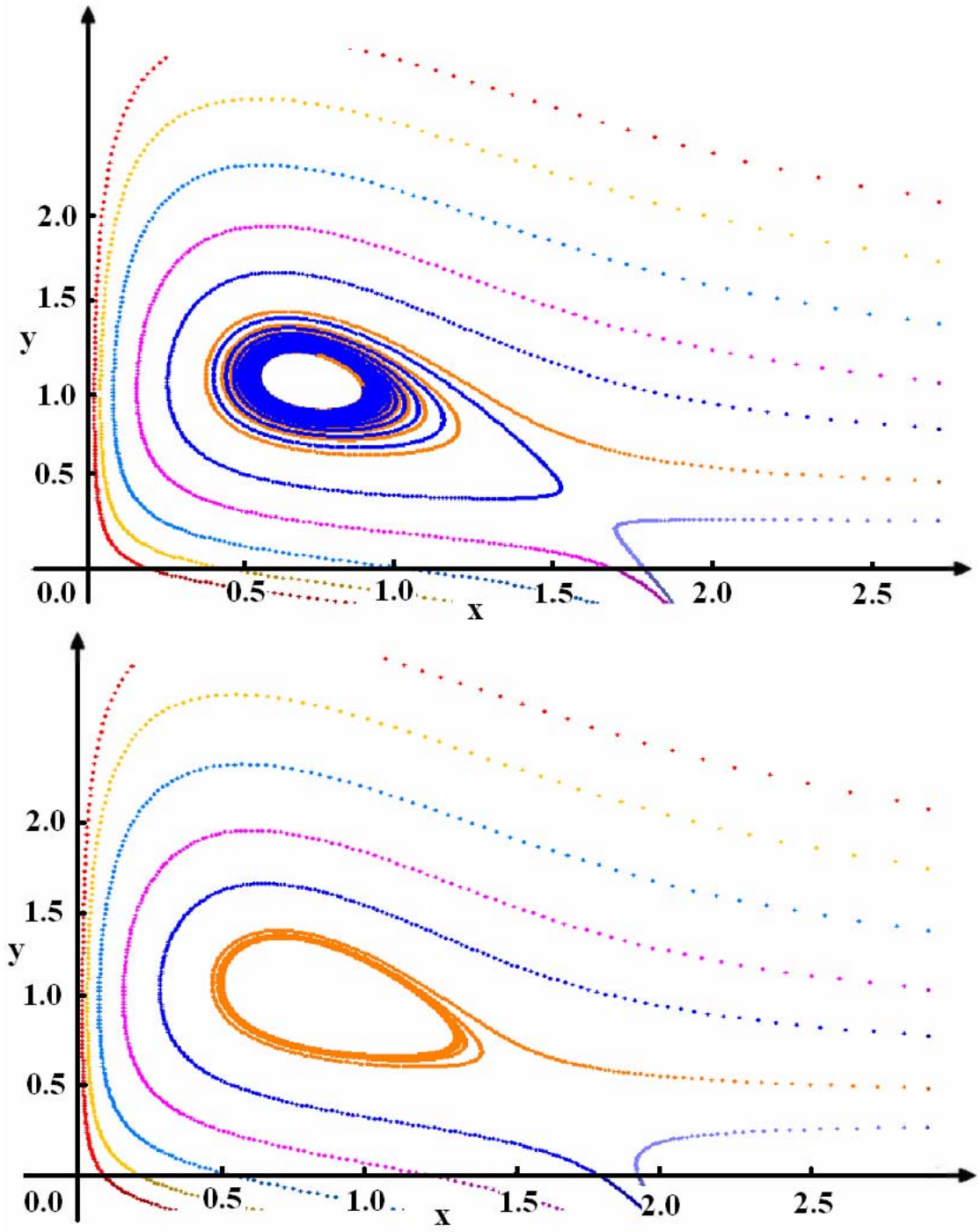


**Fig. 3.** (a) Hopf bifurcation point at ($x^*$, $y^*$) = (0.7109708, 1.102746) for the parametric values ($h_0$, $d_0$) = (0.05, 0.3701951). (b) Limit cycle at ($x^*$, $y^*$) = (0.73990351,1.1096223) for the parametric values($h_0$, $d_0$) = (0.08, 0.352276).

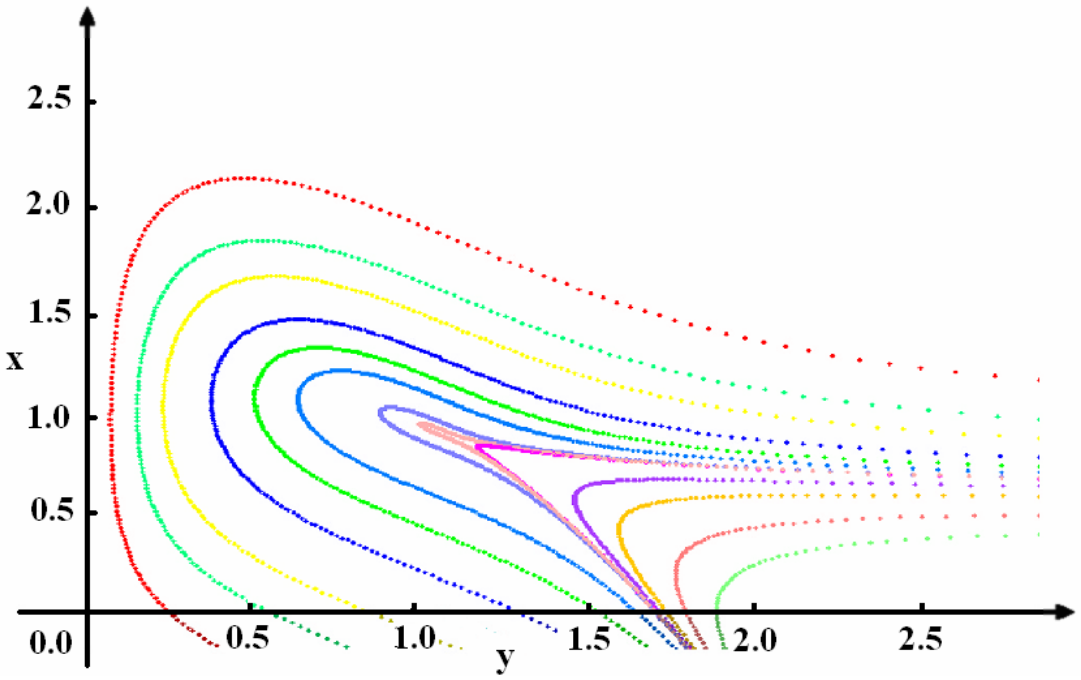


**Fig. 4.** Takens-Bogdanov point at ($x^*$, $y^*$) = 0.9319796, 1.031697) for the parametric values ($h_0$, $d_0$) = (0.30940, 1845761).