Application of singularity theory to the global dynamics of population models

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The notion of critical curves of two dimensional maps has been around since its introduction by Mira in 1964. The main objective there was to find an absorbing region of the map. Using singularity theory of Hassler Whitney as well as some topological and geometrical results, we will establish the mathematical foundation of Mira's results. The new established theory will be applied to competition models to show that local stability implies global stability. Then we will put forward a new conjecture which says that for proper excellent noninvertible maps (Whitney) with invariant boundary, local stability implies global stability.

References

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