
CODIMENSION-2 BIFURCATION ANALYSIS OF A MODIFIED NON-DEGENERATE FISHER EQUATION INTRODUCING TWO UNFOLDING PARAMETERS

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ABSTRACT

In this paper, we introduced a new modified Fisher equation with two-unfolding parameters formulated from the viewpoint of the field of singularity theory. We discussed the model Dirichlet boundary to Neumann boundary. We checked the smoothness of the considered model and rigorously established the unfolding parameters based on codimension using the restricted tangent space. We find the solution by Lyapunov Schmidt reduction and we have discussed the bifurcation analysis of our proposed modified Fisher equation.

Keywords Versal Unfolding · Restricted Tangent Space · Modified Fisher Equation · Non-degeneracy

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