Multiplicity of nodal steady-states for classical logistic equations

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Using as a base the result on multiplicity of 1-node solutions for degenerate logistic equations by López-Gómez and Rabinowitz [1], I will first show how multiplicity also occurs for classical logistic equations, for weights which are small perturbations of the degenerate case. Then, I will show how multiplicity is valid far beyond this perturbative case, even arriving at cases arbitrarily close to situations where there is uniqueness.

These results are joint work with P. Cubillos and J. López-Gómez (Universidad Complutense de Madrid) [2].

References

[1] J. López-Gómez, P.H. Rabinowitz, *The structure of the set of 1-node solutions of a class of degenerate BVP's.* J. Differential Equations **268** (2020), 4691–4732.

[2] P. Cubillos, J. López-Gómez, A. Tellini, *Multiplicity of nodal solutions in classical non-degenerate logistic equations.* Electron. Res. Arch. **30** (2022), 898–928.