

On the numerical analysis of imperfect symmetry-breaking bifurcation problems

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In K. BOEHMER, W. GOVAERTS, & V. JANOVSKÝ, [1] there is given a classification list of symmetry-breaking bifurcation points with nonlinear degeneracies up to $\text{codim} \leq 3$. There are also discussed computational techniques based on bordered matrices.

Consider that a particular symmetry-breaking bifurcation point has been computed. The aim is to study the bifurcation point subjected to small parameter perturbations. Instead of a painful experimenting, we propose the analysis of the imperfect normal form which can be done analytically. The point is to find a qualitative link between the normal form analysis and the actually computed organizing center.

References

- [1] K. BÖHMER, W. GOVAERTS, & V. JANOVSKÝ, Numerical detection of symmetry breaking bifurcation points with nonlinear degeneracies, *Math. Comp.*, **68** (1999), No. 227, 1097–1108.
- [2] K. BÖHMER, D. JANOVSKÁ, & V. JANOVSKÝ, Computer aided analysis of the imperfect bifurcation diagrams, *East-West J.Numer.Math.*, **6** (1998), No. 3, 207–222.