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## **Patterns of dynamics in cosymmetric problems and theory of bifurcations without parameter**

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In the early 1990s V.Yudovich introduced the notion of cosymmetry. He discovered that in this case steady states are generically non-isolated and investigated some bifurcation problems. We consider recently several hydrodynamic problems in unbounded domains where in a vicinity of the instability threshold, the dynamics is governed by generalized Cahn-Hilliard equation. For the time independent solutions of this equation, Bogdanov-Takens bifurcation without parameter in the 3-dimensional reversible system with a line of equilibria were recovered. This line of equilibria is neither induced by symmetries, nor by first integrals. At isolated points, normal hyperbolicity of the line fails due to a transverse double eigenvalue zero. The bi-reversible problem and its small perturbation with only one symmetry left was studied in [1],[2]. Our aim is to relate Yudovich theory to these results and to discuss hydrodynamic problems, where the reversibility breaking perturbation cannot be considered as small.

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## **References**

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