

The Mullins-Sekerka and Navier-Stokes/Mullins-Sekerka problems with contact angle

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The Mullins-Sekerka problem for closed interfaces is widely studied since it appears naturally as a gradient flow of the area functional, as a sharp interface limit of the Cahn-Hilliard equation, and in physical models of phase changes. In this talk I will address the Mullins-Sekerka problem for interfaces with a ninety degree contact angle. In particular, I will show existence and uniqueness of strong solutions and discuss stability properties. If time permits, I will also address recent results about Two-phase Navier-Stokes/Mullins-Sekerka problems with contact angle.

This is joint work with Helmut Abels, Harald Garcke, and Mathias Wilke, cf. [1], [2].

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REFERENCES

- [1] Well-Posedness and qualitative behaviour of the Mullins-Sekerka problem with ninety-degree angle boundary contact, Helmut Abels, Maximilian Rauchecker, Mathias Wilke <https://arxiv.org/abs/1902.03611>
- [2] Stability analysis for stationary solutions of the Mullins-Sekerka flow with boundary contact, Harald Garcke, Maximilian Rauchecker <https://arxiv.org/abs/1907.00833>