

Oberhuber, Tomáš**Numerical solution for the Willmore flow of graphs.** (English) [Zbl 1145.65323](#)

Beneš, Michal (ed.) et al., Proceedings of Czech-Japanese Seminar in Applied Mathematics 2005, Kuju, Japan, September 15–18, 2005. Fukuoka: Kyushu University, The 21st Century COE Program “DMHF”. COE Lecture Note 3, 126-138 (2006).

Summary: In this article we present a numerical scheme for the Willmore flow of graphs. It is based on the method of lines. Resulting ordinary differential equations are solved using the fourth-order Runge-Kutta-Merson solver. We show basic properties of the semi-discrete scheme and present several computational studies of evolving graphs.

For the entire collection see [\[Zbl 1141.65001\]](#).

MSC:

- [65M60](#) Finite element, Rayleigh-Ritz and Galerkin methods for initial value and initial-boundary value problems involving PDEs
- [35K55](#) Nonlinear parabolic equations
- [35K35](#) Initial-boundary value problems for higher-order parabolic equations
- [53C44](#) Geometric evolution equations (mean curvature flow, Ricci flow, etc.) (MSC2010)
- [74H15](#) Numerical approximation of solutions of dynamical problems in solid mechanics

Cited in 1 Review Cited in 4 Documents
