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A computation of a crystalline flow starting from non-admissible polygon using expanding selfsimilar solutions. (English) [\[Zbl 1254.68305\]](#)

Nyström, Ingela (ed.) et al., Discrete geometry for computer imagery. 11th international conference, DGCI 2003, Naples, Italy, November 19–21, 2003. Proceedings. Berlin: Springer (ISBN 3-540-20499-7/pbk). Lect. Notes Comput. Sci. 2886, 465-474 (2003).

Summary: A numerical method for obtaining a crystalline flow from a given polygon is presented. A crystalline flow is a discrete version of a classical curvature flow. In a crystalline flow, a given polygon evolves, and it remains polygonal through the evolving process. Each facet moves keeping its normal direction, and the normal velocity is determined by the length of the facet. In some cases, a set of new facets sprout out at the very beginning of the evolving process. The facet length is governed by a system of singular ordinary differential equations. The proposed method solves the system of ODEs, and obtain the length of each new facet, systematically. Experimental results show that the method obtains a crystalline flow from a given polygon successfully.

For the entire collection see [\[Zbl 1029.00061\]](#).

MSC:

[68U05](#) Computer graphics; computational geometry (digital and algorithmic aspects)

[Cited in 1 Document](#)

[65D18](#) Numerical aspects of computer graphics, image analysis, and computational geometry

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