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On the tangential velocity arising in a crystallinge approximation of evolving plane curves.

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Summary: In a crystalline algorithm, a tangential velocity is used implicitly. In this short note, it is specified for the case of evolving plane curves, and is characterized by using the intrinsic heat equation.

MSC:

53C44 Geometric evolution equations (mean curvature flow, Ricci flow, etc.) (MSC2010)
34A26 Geometric methods in ordinary differential equations
34A34 Nonlinear ordinary differential equations and systems, general theory
35K65 Degenerate parabolic equations
53A04 Curves in Euclidean and related spaces
53C80 Applications of global differential geometry to the sciences
65L20 Stability and convergence of numerical methods for ordinary differential equations
65M12 Stability and convergence of numerical methods for initial value and initial-boundary value problems involving PDEs
65N12 Stability and convergence of numerical methods for boundary value problems involving PDEs

Keywords:

tangential velocity; intrinsic heat equation; crystalline algorithm; admissible polygonal curve

Full Text: Link EuDML

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