The Hopf-Lax Formula: Application to the Redistancing problems

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ABSTRACT

This article presents a fast new numerical method for redistancing objective functions based on the Hopf-Lax formula [1]. The algorithm suggested here is a special case of the previous work in [2] and an extension that applies the Hopf-Lax formula for computing the signed distance to the front. We propose the split Bregman approach to solve the minimization problem as a solution of the eikonal equation obtained from Hopf-Lax formula. Our redistancing procedure is expected to be generalized and widely applied to many fields such as computational fluid dynamics [3], the minimal surface problem [4], and elsewhere.

REFERENCES