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On a Weighted Distance Model for Injection Moulding

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Abstract

In this thesis, we study the so-called distance model for analyzing the filling stage in injection moulding of plastics. This is done in the case of non-uniform thickness of the mould and planar as well as non-planar objects with thin walls. We are lead to consider the so-called weighted region problem, i.e. a problem of shortest path. We solve it by using Dijkstra's algorithm for computing shortest path in an associated graph.

We give a brief background to the problem of injection moulding and the derivation of the distance model. Results from numerical simulations in comparison with experiments or other simulations found in the literature are given.

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