A new implementation of piecewise constant level set for micrographic image segmentation

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Abstract: In this work, we propose to use the piecewise constant level set using Mumford-Shah model to segment micrographic images of metallographic samples used to evaluate the mechanical properties of the material. The Mumford-Shah model needs to find regions and constant values of the regions, for it we use a variational approach based on the extraction of regional information. The objective of this paper is to implement this model with a new algorithm to reduce the executed time and to automate the interpretation of those micrographic images.

Keywords: Micrographic image, Mumford and Shah Model, level set.