

# Characterisation of area-strict limits of planar $BV$ homeomorphisms

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## Abstract

We present the classification of area-strict limits of planar  $BV$  homeomorphisms. This class of mappings allows for cavitations and fractures but fulfils a suitable generalization of the INV condition. As pointed out by J. Ball, these features are expected in limit configurations of elastic deformations. Few years ago, De Philippis and Pratelli introduced the no-crossing condition which characterises the Sobolev  $W^{1,p}$  closure of planar homeomorphisms, where *cavitations* may occur. In our work we show that a suitable generalisation of this concept is equivalent with a map being the area-strict limit of  $BV$  homeomorphisms. In the  $BV$  setting more complicated singularities (*fractures*) may occur. This is a joint work with Daniel Campbell and Aapo Kauranen.