Level Set Methods for a Minimal Surface Problem

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Abstract: This report aims to provide a level set method for simulation of an equation which describes the minimal surfaces. The main focus is set in the framework relying on weak solutions of level set minimal surface equations. We will prove that there exists a weak solution of the problem. The solution will be obtained as a limit of a sequence of classical solutions to the correspondent approximation equations. It describes the minimal surface as its zero level set. On the other hand, we will discover a finite element approximation of the problem and give some error estimates.

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