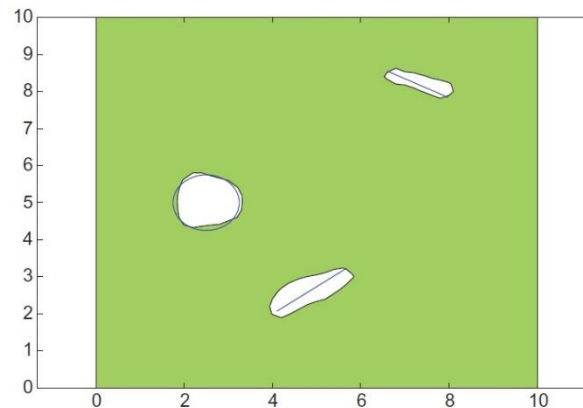


Inverse problem of flaw detection in piezoelectric materials

Piezoelectric materials are widely used as sensors, actuators and transducers. Despite several applications they are inherently brittle in nature and so solving an inverse problem of flaw detection in piezoelectric structures is a necessity. Stacked actuators are characterized by electrical impedance curves which can be utilised to identify cracks.

The objective of this work is to try combining FEM with level set method or develop any new methodology to detect defects.

Our research also focuses on optimization of energy harvesters with piezoelectric components as the procedure is not so different from solving an inverse problem. The objective of the optimization problem is to maximize energy conversion.



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Voraussetzungen:

FE Modelling using Abaqus

Basic Matab programming

Termin:

Now or later

