

Precise reconstruction of the interface between two conducting fluids in a simple cylindrical model

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Abstract

The paper deals with the problem of the reconstruction of the interface between two conducting fluids in a simple cylindrical model using a magnetic field tomography (MFT) system. The system consists of a set of 2D fluxgate sensors uniformly distributed around the object and software applying modified evolution strategy in an interface reconstruction process. Modifications of previously developed reconstruction algorithms including a special scaling procedure and a new definition of the cost function are presented. The modified algorithm enables more precise reconstruction of the interface which is in better conformity with optical observations recorded during measurement sessions.

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