

A SYMMETRIC INTEGRAL FORMULATION ON THE EEG PROBLEM

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ABSTRACT

We consider the problem of locating the epileptic sources in the brain by means of ElectroEncephaloGraphy (EEG) measurements.

Solving the inverse problem leads us to a direct and mixed Boundary Values Problem for the Laplacien in a doubly connected domain.

This paper is concerned with a Boundary Element Method to solve this direct problem.

An integral formulation is proposed, using alternative representations by single and double layer potentials, respectively in the Dirichlet and Neumann parts of the boundary.

The resulted system of integral equations is symmetric, and is discretized by the Galerkin method based on P0 and P1 finite elements.

Numerical experiments will be presented at the conference.