

Análise Numérica e Aplicações

The method of fundamental solutions applied to creeping flows

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We present a numerical study of the Method of Fundamental Solutions (MFS) for Stokes boundary value problems in 2 and 3 dimensions. The basis of the implementation of the MFS are Stokes fundamental solutions (Stokeslets and Stresslets) in the primal velocity-pressure formulation of the problems. The accuracy of the method is investigated through a series of numerical tests, which include a comparison between analytic and numerical solutions and the application of the method to classical benchmark problems.

This is joint work with Carlos Alves and Rodrigo Serrão.