Fast boundary integral equation method for the numerical computation of Laplace eigenvalues and eigenfunctions in general bounded domains [8].

Fast direct solver for integral equations in two dimensions [6].

Fast boundary integral equation method for the solution of the wave equation using convolution quadrature methods [1].

Fast vortex method for the solution of Navier-Stokes equations [5].

Calculus of H-matrices for the fast inversion of elliptic problems [2].

Application of FMM or other fast algorithms to molecular dynamics.

Fast solution of Lippmann-Schwinger equation in two dimensions [9].

Fast and well-conditioned spectral method for boundary value problems in one dimension [7].

Solution of the heat equation via potential theory and Ewald summation [4].

Poisson solvers in porous media for geophysical theory and reservoir simulations.

Sweeping preconditioners for the Helmholtz equation [3].

You are of course very welcome to propose your own topic.

REFERENCES


