

Abstract Submitted
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An efficient algorithm for axisymmetrical 2D fluid ZORAN RISTIVOJEVIĆ, ZORAN PETROVIĆ, Institute of Physics, POB 68, 11080 Zemun, Belgrade, Serbia and Montenegro — We have developed an efficient algorithm for steady axisymmetrical 2D fluid equations. The algorithm employs multigrid method as well as standard implicit discretization schemes for systems of partial differential equations. Linearity of multigrid method with respect to the number of grid points allowed us to use 256×256 grid, where we could achieve solutions in several minutes. Time limitations due to nonlinearity of the system are partially avoided by using multi level grids. In other words the initial solution on 256×256 grid was the extrapolated, steady solution from 128×128 grid which allowed using “long” integration time steps. The fluid solver is used as the basis for hybrid codes for DC discharges.

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