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Simultaneous potential and circuit solutions for two-dimensional bounded plasma simulation codes. (English) [Zbl 0903.76060](#)

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An algorithm is presented which couples external lumped circuit elements to bounded two-dimensional plasma simulation codes. This allows one to decompose the field solver into a Laplace solver (with boundary conditions eventually on applied potentials) and a Poisson solver (with zero boundary conditions). The method is shown on the simulation of a dually excited capacitively coupled RF discharge. The possibility of applications to a plasma processing reactor is also discussed.

Reviewer: [I.Abonyi \(Budapest\)](#)

MSC:

[76M20](#) Finite difference methods applied to problems in fluid mechanics

[76X05](#) Ionized gas flow in electromagnetic fields; plasmic flow

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