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Parallel computation of electrostatic potentials and fields in technical geometries on SUPRENUM

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The programs EPOTZR und EFLDZR have been developed in order to compute electrostatic potentials and the corresponding fields in technical geometries (example: Diode geometry for optimum focussing of ion beams in pulsed high-current ion diodes). The Poisson equation is discretized in a two-dimensional boundary-fitted grid in the (r,z)-plane and solved using multigrid methods. The z- and r-components of the field are determined by numerical differentiation of the potential. This report contains the user's guide of the SUPRENUM versions EPOTZR-P and EFLDZR-P. (orig./HP)

Availability note (English)

MF available from INIS under the Report Number.

Abstract (German)

Die Programme EPOTZR und EFLDZR gestatten eine effiziente Berechnung elektrostatischer Potentiale bzw. Felder in rotationssymmetrischen, technischen Geometrien (Beispiel: Diodengeometrie zur optimalen Fokussierung von Ionenstrahlen in gepulsten Hochstrom-Ionendioden). Dazu wird die Poissongleichung in einem zweidimensionalen, rand-angepassten Gitter in der (r,z)-Ebene (Zylinderkoordinaten) diskretisiert und das so definierte Gleichungssystem mittels Mehrgittermethoden geloest. Aus diesem Potential werden dann die z- und r-Komponente des elektrostatischen Felds durch numerische Differentiation berechnet. Dieser Bericht enthaelt die Programmdokumentation der Programmversionen EPOTZR-P und EFLDZR-P fuer den Parallelrechner SUPRENUM. (orig./HP)

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The record is publicly accessible, but files are restricted to users with access.

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EPOTZR-P and EFLDZR-P user's guide

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