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

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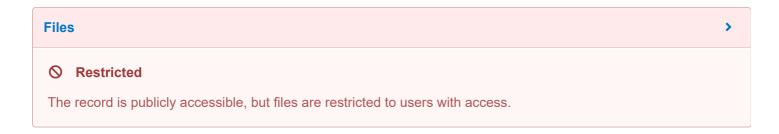
The programs EPOTZR und EFLDZR have been developed in order to compute electrostatic potentials and the corresponding fields in technical geometries (example: Diode geometry for optimum focussing of ion beams in pulsed high-current ion diodes). The Poisson equation is discretized in a two-dimensional 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)



# **Additional details**

## **Additional titles**

Subtitle (English)

EPOTZR-P and EFLDZR-P user's guide

Original title (German)

Parallele Berechnung elektrostatischer Potentiale und Felder in technischen Geometrien auf SUPRENUM

Original subtitle (German)

Benutzerhandbuch EPOTZR-P und EFLDZR-P.

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