Title (en)
GENERATION OF AN EXACT THREE-DIMENSIONAL QUADRUPOLE ELECTRIC FIELD.

Title (de)
ERZEUGUNG EINES GENAUEN DREIDIMENSIONALEN ELEKTRISCHEN QUADRUPOLFELDES.

Title (fr)
GENERATION D'UN CHAMPS ELECTRIQUE QUADRIPOLAIRE TRIDIMENSIONNEL EXACT.

Publication
EP 0509986 B1 19950531 (EN)

Application
EP 90903006 A 19900108

Priority
EP 9000030 W 19900108

Abstract (en)
[origin: WO9111016A1] An exact three-dimensional rotationally symmetric quadrupole field or an electric field of higher multipole moments can be generated by closed boundaries with continuously varied potential, especially with linearly variable potential, in the ideal case by simple cone-shaped boundaries with linearly variable potential. An example for the application of the field is storage of charged particles inside the closed boundaries. Within the same cone-shaped boundaries, a homogeneous ideal field in the direction of the symmetry axis can be superimposed. This field can be employed for excitation of the kinetic energy, for quenching, or for energy analysis of the stored charged particles. For the generation of mass spectra the mass-to-charge specific fundamental frequencies of the charged particles stored in the electrode structure are excited. The image currents induced in the electrode structure are frequency analysed (e.g. by Fourier transform).

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WO 9111016 A1 19910725; CA 2033753 A1 19910709; CA 2033753 C 19951121; DE 69019829 D1 19950706; DE 69019829 T2 19960314; EP 0509986 A1 19921028; EP 0509986 B1 19950531

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