

Title (en)  
MAGNETIC ANALYZER FOR RELATIVISTIC CHARGED PARTICLES

Title (de)  
MAGNETISCHER ANALYSATOR FÜR RELATIVISTISCHE GELADENE TEILCHEN

Title (fr)  
ANALYSEUR MAGNÉTIQUE POUR LES PARTICULES CHARGÉES RELATIVISTIQUES

Publication  
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Application  
**EP 20210319 A 20201127**

Priority  
LT 2020038 A 20201013

Abstract (en)  
The invention is from the field of physical measuring instruments and nuclear device engineering and can be used to detect relativistic charged particles, to determine their spatial position (angular distribution) and to measure the particle energy spectrum, and can be adapted to study relativistic electron flows in the Earth's radiation belts using space satellites equipped with particle analyzers. In the proposed relativistic particle analyzers, the uniform magnetic deflecting field is concentrated in the domain of a right circular cylinder or a semi-cylinder shape, and the focus of analyzer is installed on the side surface of a circular cylinder or in a 90° focal plane. Circular cylinder surface and 90° plane focusing magnetic relativistic particle analyzers are proposed, characterized by the smaller dimensions and mass, the wider range of measured energies, the higher density of channels leading to the enlarged measurement sensitivity and the better selectivity in particle angular distribution.

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CPC (source: EP)  
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Citation (applicant)  
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