

ACCELERATOR PERFORMANCE AS CRITERION FOR THE SELECTION OF  
THE ACCELERATOR INSTALLATION IN VINČA

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A review of basic physical principles governing the acceleration of charged particles is given. Basic characteristics and limitations of DC and cyclic machines as heavy-ion accelerators are discussed.

Beam properties as defined by contemporary experimental physics research: energy, intensity and the quality of the beam, are given, and a study of the performances of various types of accelerators is made.

The impact of superconducting technology on accelerators is analyzed, and complex accelerator installations as heavy-ion facilities are discussed.

On the basis of general analysis, as an optimal solution to the short, medium and long term goals of the accelerator project in Vinča an installation based on the cyclotron machine coupled to the ECR external ion source is selected.