FFAG 2007

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Update on the non-scaling FFAG superconducting gantry for carbon/proton therapy application

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The major problem in a design and building of the carbon/proton therapy facilities are the isocentric gantries. The weight of the transport elements of the isocentric gantry in the most recent design in Darmstadt, Germany is 130 tons, while the whole gantry with support structure; (rotating part with transport elements and counter weights) is 630 tons. This represents the most difficult challenge of the whole facility. We present a non-scaling FFAG superconducting magnet design with an estimated weight of 1.5 tons. Advantages of such a system are a smaller weight and ease in operation due to the fixed fields for all required ion energies for treatment.

Summary

This represents a great advantage of the non-scaling FFAG concept with respect to the other ways of beam transport in the isocentric carbon/proton gantry application.

Auteur principal: TRBOJEVIC, Dejan (Brookhaven National Laboratory)

Co-auteur: Prof. KEIL, Eberhard (CERN)

Orateur: TRBOJEVIC, Dejan (Brookhaven National Laboratory)

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