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Cryostat Design of 230 MeV Superconducting Isochronous Cyclotron for Proton Therapy

Wednesday, 30 August 2017 13:15 (1h 45m)

We have designed a 4 tesla superconducting isochronous cyclotron for proton therapy. Its yoke weight is about 65 tons, which is less than one third of our normal-conducting 230 MeV cyclotron. Application of superconducting wire to cyclotron can contribute to reduction of dimension, initial costs, power consumption and lead time. The superconducting coils using NbTi wire are conduction-cooled by four 4 K Gifford-McMahon cryocoolers. The superconducting coil assembly is supported by four horizontal straps and four vertical columns. We will report cryostat designs of structure, cooling and quench protection.

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