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【914】Combined function superconducting magnets for light and compact proton therapy gantries

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The use of proton therapy for cancer treatment shows a growing trend.
To direct the proton beam from all directions to the tumor in the patient, a rotatable gantry is used.
In this work we present the design of a superconducting bending magnet section for future light and compact iso-centric gantries. The coils will be wound with Nb3Sn Rutherford cables. Following the choice of a suitable superconducting strand, we estimate the AC losses during the energy sweeps, the expected coils heating in operation and the design of the cooling system as well as of the mechanical support structure. Considerations about the quench protection scheme are also presented.

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