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Wed-Mo-Po3.04-01 [21]: Design and development of beamline system for a proton therapy facility

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A proton therapy facility with multiple treatment rooms based on superconducting cyclotron scheme is under development in HUST (Huazhong University of Science and Technology). This paper will introduce design and development of the beamline system that convers the ESS (Energy Selection System) section based on an energy degrader, the gantry beamline with image optics, and a kicker system which performs fast beam switch during spot scanning. Design, construction and magnetic field measurements of beamline magnets, including dipoles, quadrupoles and the kicker magnet will be described. A lightweight superconducting gantry beamline with alternating gradient (AG) combined function dipoles, which is planed for future upgrade, will also be discussed.

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