

Design of the Dipole and Quadrupole Magnets of the PRAMES, S.I. KUKARNIKOV, V.K. MAKOVEEV, A.YU. MOLODOZHENTSEV, LPP, JINR, Dubna, Russia - The paper presents 2D-calculation results of magnetic elements of the PRAMES (Prague Medical Synchrotron). This machine is a dedicated accelerator for cancer therapy. The output energy of the beam should be variable in the range 60 - 220 MeV. The maximum magnetic field of the dipole magnet should be 1.2 T, the maximum magnetic field ramp less than 8 T/s. The injection energy is equal to 12 MeV. The focusing structure of the proton synchrotron consists of 8 dipole and 18 quadrupole magnets. All magnets are laminated to minimize eddy currents. The dipoles parallel-edge, H-type magnets. The field uniformity should be of the order of $\pm 1 \times 10^{-4}$ in the working area (± 63 mm and ± 27 mm in the horizontal and vertical plane respectively). The maximum magnetic field on the pole of the quadrupole lenses should be less than 1 T. The gradient uniformity of quadrupole magnets in the working region should be less than $\pm 3.5 \times 10^{-4}$.