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Simulation of Saddle Coil and Helical Winding Magnetic Field Perturbation in the IR-T1 Tokamak YOUNES ADLTALAB, PEJMAN KHORSHID, ELHAM ABIZI MOGHADAM, Department of Physics, College of Science, Mashhad Branch, Islamic Azad University, Mashhad, Iran — The magnetic field of a set of saddle coils compared to the magnetic field of the helical winding coil on IR-T1 tokamak in a simulation method. The equation of helical windings that they mounted on vacuum chamber in a spiral modes ($L=2, n=1$) and ($L=3, n=1$), where L represents the number of toroidal rounds, and n represents the direction of the poloidal round, using Green function has been calculated, too. The coordinate system defined on a torus and an electric current applied to create a magnetic field and the magnetic field of resonant helical magnetic field disorders of the confinement were calculated in the whole space. In this study, the shape and structure of the Saddle coils has been defined toroidally and then poloidally configuration. The resulting simulation code is used to predict the position and structure of saddle coil that has same magnetic field generation with respect to Helical winding.

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