**Abstract**  
In this work, we present an approximation of magnetic surface by the analytical solution of the Grad-Shafranov equation for HT-7 TOKAMAK. A generalized Grad-Shafranov-type equation has been used. Specific functional forms of plasma internal energy and current are used. We approximated the magnetic surfaces by an equilibrium calculation. These magnetic surfaces are based on the expansion of free functions as a quadratic influx function. Tables 1, Figs 2, Refs 28.