# Development of compact static plasma source by rotating magnetic field

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A rotating Magnetic Field (RMF) is a technique to drive the toroidal electron current in cylindrical plasma. The RMF technique is widely applied in the compact torus (CT) experiments for formation and sustainment of magnetic configuration because it does not deprive the most important characteristic of the CT; i.e. simply-connected structure [1, 2].

In this study, the RMF technique is employed to generate warm plasma statically. For ion source for example, a plasma source with simple apparatus and low ions temperature is suitable. A compact plasma source generated by RMF is able to initiate plasma discharge and sustain the plasma continuously. Furthermore, driven toroidal current forms poloidal magnetic field which potentially improves confinement property. In the developed system, a set of three-phases RMF antennas has been proposed to reduce inductive coupling between coils.

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