# Cryogenic system of the 3W1 superconducting wiggler magnet

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Institute of high energy physics, Chinese academy of sciences plans to develop a superconducting wiggler magnet which is going to be installed into the storage ring of Beijing electron-positron collider to replace the 3W1 permanent wiggler magnet. Design of the cryogenic system of 3W1 superconducting wiggler magnet is introduced in this paper, including design of the cryostat and current leads, analysis of heat leak, design of the cooling system, and so on. The superconducting magnet is going to operate in liquid helium bath. Cryocoolers are used for cooling down the cryostat and current leads and also avoiding the liquid helium vaporing. In order to reduce the heat leak, HTS materials are used for the current leads. The design of the cooling scheme of the HTS current leads is also introduced.