



## Cryogenics Operations 2018

Contribution ID: 22

Type: not specified

### Operation of large capacity helium turbine with eddy current brake in EAST helium refrigerator

**Abstract.** The helium turbine is the core part of helium refrigerator. In order to ensure the refrigeration capacity and reliability, the helium turbines with eddy current brake were operated in EAST cryogenic system. The helium turbines with eddy current brake and Rotor Cooling Circuit (RCC circuit), whose total braking capacity can be reached 10 kW. The turbines rotors are supported by fully dynamic radial gas bearings. And the thrust gas bearing is static gas bearing combined with dynamic bearing, in order to increase the thrust bearing capacity. Up to now, the eddy current brake turbines with large capacity have been performed for many times in EAST cryogenic system. The operation process, measurement and control design of the turbines were introduced in this paper. The test results show that the application of eddy current helium turbine's start-up, running process and shut down process are very easy to operate, the efficiencies are high and the protection system is very well.

**Primary author:** Mr FU, bao (IPP)

**Co-author:** Mrs LI, shanshan (IPP)

**Presenter:** Mrs LI, shanshan (IPP)