



Contribution ID: 1104

Type: **Poster Presentation**

C1Po1E-06 [33]: Cryogenic System Design for CiADS Accelerator

Monday, July 22, 2019 9:00 AM (2 hours)

China Initiative Accelerator Driven System (CiADS) is a high-power nuclear waste processing research facility being built at huizhou, Guangdong, CHINA. CiADS consists of a 2.5 MW superconducting proton linac with energy of 500 MeV and 5 mA, a liquid lead bismuth eutectic (LBE) cooled fast reactor with 10 MW, and a granular flow target employed to coupling the accelerator and the sub-critical core. The superconducting part of the proton linac is about 300 meters long and contains 29 cryomodules cooled by super-fluid helium. In order to decrease head loss of 2K super-fluid helium, the cryomodule should contain one thermal radiation shield operating from 50 to 65 K to prevent thermal radiation. Additionally, 4.5-K gas helium is used to provide forced cooling to the fundamental power couplers for the 2K cavities of cryomodule. So, a helium cryogenic system is designed by IMP to supply different cooling power for cryomodules.

Primary authors: NIU, Xiaofei (CAS); GUO, xiaohong (CAS)

Presenters: NIU, Xiaofei (CAS); GUO, xiaohong (CAS)

Session Classification: C1Po1E - Large Scale Systems I