Contribution ID: **28** Type: **not specified**

Operation experience of cryogenic system and cryomodules for the superconducting linear accelerator at IUAC, New Delhi.

The superconducting linear accelerator as a booster of 15 UD pelletron accelerator is commissioned and operating for more than three years. The acceleration is achieved by a series of 97 MHZ superconducting quarter wave bulk niobium cavities at 4.2 K. In the first phase, accelerator was partly commissioned with first linac cryomodule, superbuncher, rebuncher cryostat along with 500 W capacity CCI make helium refrigerator. In the second and final phase two more linac cryomodules with eight cavities each were installed in beam line. New helium refrigerator of Linde make LR 280 along with the additional section of liquid helium distribution line were integrated with existing liquid helium distribution network. The cooling philosophy for five beam line cryomodules with the new refrigerator was modified to have faster cooling rate of 20 –25 K of the cavities against earlier 8- 10 K/hr in the critical zone of 150- - 70 K. Pressure fluctuation in the helium vessel of cavities was reduced significantly to avoid frequent breaking of RF locks. The parallel liquid helium filling to each Cryomodule is managed by VME based software CADS. Performance of new cryogenic system and the cryomodules during beam acceleration run will be discussed.

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