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SPIRAL2 Cryogenic System

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SPIRAL2 is a rare isotope accelerator which will be based at GANIL, it is dedicated for the production of high intensity radioactive beams ($E=40\text{MeV}$, $I=5\text{mA}$). The driver of SPIRAL2 is a Linac, it uses bulk niobium superconducting RF cavities cooled with liquid helium. The cryogenic transfer line of the Linac is composed of about 20 valves boxes which supply two types of helium cryogenic lines: The first at $T=4.2\text{K}$ to feed the cavities and the second at $T=60\text{K}$ for the thermal shield of the cryomodules. The refrigerator of the cryogenic installation must evacuate a total heat loss of about 1kW at $T=4.2\text{K}$ and 2.5kW at $T=60\text{K}$. In this presentation, the SPIRAL2 cryogenic installation design will be detailed and its different operation modes will be described. The preliminary cryogenic experimental test results of the first cryomodule B at IPN ORSAY will be also presented and interpreted.

Proposed for workshop session (see call for abstracts): 1- Operation 2- Maintenance 3 - Safety 4 - Control

1- Operation

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