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Performance tests of the SPIRAL2 LLRF system on a qualified accelerator cryomodule

CEA/Saclay developed the LLRF system to control the accelerator cavities of the SPIRAL2 project. This LLRF system, based on in-house developed VME-64X electronic boards, has been designed in order to offer the high flexibility required by the various types of cavities (RFQ, normal conducting rebunchers and superconducting resonators), as well as the various operating modes of the accelerator.
A prototype system was manufactured in 2009 and intensively tested with a superconducting resonator in the beginning of 2010, in particular to demonstrate the possibility to operate the SPIRAL2 high Q (~106) resonators using the I/Q driven mode, especially at cavity startup.
Since then, the LLRF series productions have been launched and completed, while the SPIRAL2 series cryomodules were assembled and qualified.
This poster presents the performance characterization of the LLRF obtained with the final system on a low beta SPIRAL2 cryomodule of the series (β=0.07).

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