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# RF power station stabilization techniques and measurements at LNF-INFN

*Tuesday, 21 May 2024 16:00 (2 hours)*

In the framework of EuPRAXIA@SPARC_LAB project, we are studying possible solutions to upgrade and measure the amplitude and phase stability of the RF accelerating fields generated by a klystron. These studies concern the C- and X- band klystrons installed in the LNF infrastructures. In particular, we will present our work on a fast phase feedback around the C-band power station (50 MW klystron and solid state modulator) installed at SPARC_LAB. We are trying to push the timing jitter below the standard limit of such systems (few tens of fs RMS). A second topic is the study of the jitter of the X-band power station (50 MW klystron and solid state modulator) installed in the TEX facility. Precise measurements on amplitude and phase of this system will be reported at different positions both upstream (LLRF and pre-amp) and downstream (waveguides and prototype structure) the klystron.

## Footnotes

## Funding Agency

## Paper preparation format

LaTeX

## Region represented

Europe

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