



Contribution ID: 2589 Contribution code: WEPM008

Type: **Poster Presentation**

Efficient RF components of solid-state amplifiers for Sirius storage ring's RF plant

Wednesday, 10 May 2023 16:30 (2 hours)

Solid-state RF amplifiers (SSAs) are being developed to compose SIRIUS storage ring's RF plant for operation with superconducting cavities. Each amplifier must deliver up to 65 kW of RF power at 500 MHz and a high AC-to-RF efficiency is desired to minimize operation costs. To this end, amplifier modules able to deliver 900 W with approximately 70 % DC-to-RF efficiency were designed. To combine the output of 80 modules, a cavity combiner was simulated and a prototype was assembled. This paper presents the performance of the RF modules obtained from a pilot batch, as well as measurement results from the cavity combiner at low RF power. Finally, a summary on the ongoing development of solid-state amplifiers is presented.

Funding Agency

Footnotes

I have read and accept the Privacy Policy Statement

Yes

Primary author: HOFFMANN WALLNER, Mark (Centro Nacional de Pesquisa em Energia e Materiais)

Co-authors: PONTES BARBOSA LIMA, André (Centro Nacional de Pesquisa em Energia e Materiais); DAMINELLI, David (Centro Nacional de Pesquisa em Energia e Materiais); HOSHINO, Felipe Koji Godinho (Brazilian Synchrotron Light Laboratory); CARVALHO DE ALMEIDA, Iago (Centro Nacional de Pesquisa em Energia e Materiais); FARIAS, Ruy (Centro Nacional de Pesquisa em Energia e Materiais); VILLAR DE CARVALHO, Thiago (Centro Nacional de Pesquisa em Energia e Materiais); FREIRE, Vitor (Centro Nacional de Pesquisa em Energia e Materiais)

Presenter: CARVALHO DE ALMEIDA, Iago (Centro Nacional de Pesquisa em Energia e Materiais)

Session Classification: Wednesday Poster Session

Track Classification: MC7: Accelerator Technology and Sustainability: MC7.T08: RF Power Sources