



Contribution ID: 1442 Contribution code: THPS35

Type: **Poster Presentation**

A novel pulse compressor with dielectric assistance

Thursday, 23 May 2024 16:00 (2 hours)

A compact pulse compressor with dielectric loaded structure is proposed and simulated. The novel pulse compressor adopts a spherical resonant cavity design with dual-mode polarization mode. A dielectric sphere added in the centre of the spherical cavity can reduce the volume and weight of the pulse compressor and improve the quality factor of the cavity. A C-band compact storage cavity model is designed and simulated on ANSYS HFSS working on 5.712 GHz. The dielectric permittivity of the dielectric sphere is 9, and the dielectric tangent loss is 0.00005. The simulation of the dielectric-assist resonant cavity with an inner diameter of 34 mm indicates an unloaded quality factor about 70000.

Footnotes

Funding Agency

Paper preparation format

Word

Region represented

Asia

Primary author: FENG, Boyuan (Tsinghua University in Beijing)

Co-authors: SHI, Jiaru (Tsinghua University in Beijing); ZHA, Hao (Tsinghua University in Beijing); GAO, Qiang (Tsinghua University in Beijing); LIN, Xiancai (Tsinghua University in Beijing); CHEN, Huaibi (Tsinghua University in Beijing)

Presenter: FENG, Boyuan (Tsinghua University in Beijing)

Session Classification: Thursday Poster Session

Track Classification: MC7: Accelerator Technology and Sustainability: MC7.T16 Pulsed Power Technology