Service des Accélérateurs, de Cryogénie et de Magnétisme

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19

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SEMINAIRE SACM

14 H 00 K.C. Mittal
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Bât.130 Pièce 52

Gigawatt Pulse Power Systems and SRF Cavity Development Programs at BARC India

Accelerator and Pulse Power Division of BARC has been developing Pulse Power Systems from 0.5 GW to 50 GW, 50 to 100 ns, 0.2 to 1 MV single pulse systems since early seventies. A number of systems in the impedance range of 150 ohm to ~15 ohm based on Marx generator, tesla transformer, oil and water transmission lines, oil and gas spark gap switches and copper sulphate load have been developed. All these systems have been used to generate intense pulsed relativistic electron beams (REB) using explosive field emission process. These gigawatt beams were earlier intended for beam propagation and beam plasma interaction studies related to thermo nuclear fusion. During the last decade or so, we started using these beams for High Power Microwave (HPM) and Flash X Ray (FXR) generation studies. HPM generation in VIRCATOR, BWO and Beam Plasma Device (BPD) and FXR by bremsstrahlung targets has been demonstrated. A brief description of the systems and results of some experiments on beam generation, HPM and FXR will be presented.

Superconducting RF cavities are employed in high energy particle accelerators to produce accelerating field gradients of ≥10 MeV/m. A program to develop single cell Niobium Elliptical cavity for a proton beam with β=0.42 has been taken up. Some of the design features and proto type copper cavity development will be presented.

NB : La présentation d'une carte d'identité ou d'un passeport est exigée à l'entrée du centre . Tous les auditeurs extérieurs sont priés de prévenir à l'avance de leur visite : Geneviève VERON, Tél. : 01 69 08 69 49 (UE : délai de 24h, hors UE : délai de 4 jours) .

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