Contribution ID: 302 Type: Oral

Status of a 140 kV Solid State Marx modulator

Monday, 19 June 2017 16:45 (15 minutes)

In the framework of a collaboration, CEA and CERN are working on an air insulated solid state pulse modulator to drive LEETCHI electron gun, source of future high current, long pulse RF accelerator. The requirements are pulses in the range of $140 \, \text{kV}$ (1% flat top), $10 \, \text{A}$, $150 \, \mu \text{s}$ width, at a repetition rate up to $50 \, \text{Hz}$ and a reproducibility pulse-to-pulse better than $10 \, \text{-}3$. The proposed modulator is based on a Marx topology which employs standard solid state components. This topology is of particular interest in reducing size and cost. It has also the main advantage of transformerless operation. We describe here the status on this modulator with the most recent experimental results and repeatability analysis.

Primary authors: Dr CADILHON, Baptiste (CEA); Dr CASSANY, Bruno (CEA (FR)); Mr CUBAYNES, Fabrice

(EP3E (FR)); Dr PEPITONE, Kevin (CERN)

Presenter: Dr CASSANY, Bruno (CEA (FR))

Session Classification: Oral session 5 - Pulse Forming Networks and Alternate Technologies (part I)

- Session Chair : John Mankowski

Track Classification: High Power Electronics