

6th RaDIATE Collaboration Meeting



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High voltage breakdown studies under the influence of radiation fields

Tuesday, 10 December 2019 17:00 (2 hours)

The ARIEL facility at TRIUMF will add two new state-of-the-art target stations to produce radioactive ion beams using the Isotope Separation On-Line (ISOL) method. In the ISOL method, a driver beam impinges a target material creating radionuclides that are ionized and extracted with a high electric field. The driver beam and target interaction cause radiation fields of around 10^9 Gy/h that in turn affect the breakdown strength of the gas used for cooling the target station. To guarantee reliable operation, it is mandatory to assess the effect of such radiation levels on the gas breakdown strength. For this, a spark gap has been employed and a clear decrease is observed at low radiation levels. More experiments are envisioned to map the breakdown strength at levels similar to the ones expected online.

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