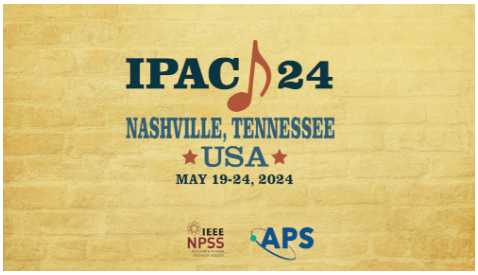

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First implementation of KO extraction at COSY

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

Radio Frequency Knock Out (RF-KO) resonant slow extraction is commissioned at the Cooler Synchrotron (COSY) Jülich for the first time to extract the stored beam and deliver spills with constant particle rates to the experiments. Therefore, transverse RF excitation generated with a software-defined radio is applied to control the extraction rate. A built-in feedback system adjusts the excitation amplitude to maintain the desired extraction rate. To suppress fluctuations of the particle rate on timescales of milliseconds and below, an optimization algorithm is used to tune the RF signals used for excitation. The method was used extensively during the final run of COSY in 2023, reliably delivering stable beams to various users.

Footnotes

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