

## The RF system for the MICE experiment

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The International Muon Ionisation Cooling Experiment (MICE) is designed to demonstrate the effectiveness of ionisation cooling to reduce the phase space footprint of a charged particle beam, principally to allow the subsequent acceleration of Muons for next generation colliders and/or neutrino factories. The experiment (and indeed any subsequent accelerator cooling channel based on the same principles) poses certain unusual requirements on its RF system, whilst the precision measurement of the ionisation cooling process demands special diagnostics. This paper shall outline the key features of the RF system, including the LLRF control, the power amplifier chain, distribution network, cavities, tuners and couplers, all of which must operate in a high magnetic field environment. The RF diagnostics which, in conjunction with the other MICE diagnostics, shall allow detailed knowledge of the amplitude and phase of the acceleration field during the transit of each individual Muon shall also be described.