

## Progress on the Superconducting Magnets for the MICE Cooling Channel

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**Abstract** - The muon ionization cooling experiment (MICE) consists of a target, a beam line, a pion decay channel, the MICE cooling channel. Superconducting magnets are used in the pion decay channel and the MICE cooling channel. This report describes the MICE cooling channel magnets and the progress in the design and fabrication of these magnets. The MICE cooling channel consists of three types of superconducting solenoids; the spectrometer solenoids, the coupling solenoids and the focusing solenoids. The three types of magnets are being fabricated in the United States, China, and the United Kingdom respectively. The spectrometer magnets are used to analyze the muon beam before and after muon cooling. The coupling magnets couple the focusing sections and keep the muon beam contained within the iris of the RF cavities that are used to recover the muon momentum lost during ionization cooling. The focusing magnets focus the muon beam in the center of a liquid hydrogen absorber. The first of the cooling channel magnets will be operational in MICE in the spring of 2010.

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