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## Stealth superconducting magnet technology for collider IR and injector requirements

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The intersection regions and the beam injection channel of a high-energy collider require magnets that must act strongly upon one beam yet not at all on a closely neighboring beam. Designs are presented for three examples: a septum dipole that serves as a forward spectrometer centered on an ion beam after collision, which must clear an electron beam leaving the IP; a final-focus quadrupole that must provide high-gradient focusing of electrons with large aperture but pass a close-lying ion beam; and a high-gradient quadrupole that must operate in the background field of a spectrometer solenoid. All designs use to advantage a new superconducting cable-in-conduit that provides for compact winding, robust end geometry, and in-cable flow of liquid helium.

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