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Development of Hybrid Multipole Permanent Magnet for High-Intensity Beam Transportation

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Space charge compensation technology using multiple multipolar magnetic field components has been applied to high intensity beam transport. In order to realize this compensation technology in a limited space, we devised a compact size permanent hybrid multi-pole magnet. This magnet can produce two or more adjustable multi-pole components at the same location. In this presentation, we will discuss the design of magnets for the simultaneous production of quadrupole and adjustable octupole components using permanent magnet materials and the manufactured prototypes of magnet systems.

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