A transverse superconducting bulk magnet

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In order to provide a transverse polarized target for CLAS12 a superconducting self tuning cylinder is under test, and it can provide the required transverse field, shielding an external one. The dual operation of such magnetic system is described.

A test bench to measure the transverse properties of a cylinder having about 40 mm diameter and about 90 mm length has been commissioned in Ferrara. The status of the measurements is reported.

The combination of self tuning dual operation of the magnet and the absence of current leads is a viable way for applications in polarized experiments (also for the easier longitudinal configuration), with respect to the use of wound superconductors or permanent magnets.