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Electromagnetic design of NoMoS, a neutron decay products momentum spectrometer

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The beta decay of the free neutron provides several probes to test the Standard Model of particle physics as well as to search for extensions thereof. NoMoS, the neutron decay products momentum spectrometer, presents a novel method of momentum spectroscopy: it utilizes the R × B drift effect to disperse charged particles dependent on their momentum in an uniformly curved magnetic field. The NoMoS spectrometer is designed to precisely measure momentum spectra and angular correlation coefficients in free neutron beta decay. We present recent developments in the electromagnetic design of the spectrometer.

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