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## Design of the First $\mu$ SR Spectrometer at China Spallation Neutron Source

The Phase II upgrade project of the China Spallation Neutron Source includes the construction of a surface  $\mu$  beam line and a  $\mu$ SR spectrometer, which will be the first  $\mu$ SR spectrometer built in China. Here we report the conceptual design of the spectrometer including the sample environment. Based on the design parameters of the muon beam, we design the spectrometer with a large number of detector units to maximize the counting rate. We designed the sample chamber with a fly-past structure to reduce the background. In this report we describe the conceptual design and simulation of the spectrometer.

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