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Update on Commissioning and Development of Cryogenic SOS@PULSTAR apparatus

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Measuring particle EDMs is one of the most challenging experiments in the field of high precision physics. Present neutron EDM experiments are approaching limits of the traditional measurement technique due to both, statistic and systematic limitations. nEDM@SNS collaboration is working on realization of new approach, which employs production of trapped neutrons and measurement of neutron polarization in LHe environment below 0.5K with use of polarized He-3 as both, neutron polarization detector and co-magnetometer. This technique potentially is restricted only by neutron beam intensity. Realization of the technique relies on simultaneous precision spin manipulations of both, neutron and He-3 atoms. To start practical realization of the spin manipulation system, we have designed a smaller cryogenic NMR system, which is now undergoing commissioning at NC State University. We describe the goals and methods of the project snd report on recent progress.

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