Short Expression of Interest for SPD Experiment at NICA.

Physics

- The expected luminosity at the NICA-SPD experiment can provide a significant yield of charmonium with even charge parity, such as η_c and χ_c. These processes are extremely sensitive to the polarization states of the initial gluons, and therefore their study on polarized beams can essentially contribute to an understanding of the spin crisis.
- Another task which could be suggested for the NICA-SPD is the investigation of $\tau^+\tau^-$ production. Tau lepton polarization can be measured from the distribution of its decay products and can provide an additional to other processes information on the quark polarization in the polarized proton beams.

Hardware, Software and Data Analysis

In this part SINP MSU group planning to participate in:

- Simulation and development of silicon tracking system adopted for spin physics.
- Development of detector control system for tracking components (Slow control). This system is absolutely necessary for monitoring of tracker condition and data quality.
- Participation in silicon tracking system modules assembly and testing, including development of stands, development of sensor visual control system.
- Development of techniques of tracking. This task is connected to tracker simulation and step to data analysis.
- Participation in development of alignment procedure and software of track detectors by use test experimental data. Tacking system must be built with the best possible precision, but any way it would impossible to avoid any misalignment. This procedure gives possibility of software correction of misalignment base on real data.

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