Saint-Petersburg State University,
Laboratory of Ultra-High Energy Physics

Expression of interest to join the SPD Collaboration at NICA

Scientific interests of the team:
experimental and theoretical physics of ultra-relativistic hadron collisions, detector physics and electronics, extreme conditions of strongly interactinfg matter, quark-gluon plasma, quark-gluon strings, initial stages of hadron-hadron collisions, long-range correlations, strangeness and heavy flavours

2) Experience of the team:

- since 1992 -- present: ALICE at the LHC at CERN (responsibility in development of two subsystems of ALICE, among them: the ITS-CMA – the Inner Tracking System Cooling-Mechanics-Alignment of Si-dedectors)
- 1996 – 2003: the scientific collaboration NA57 at the SPS at CERN;
- 2005 – Contribution to the ALICE Physics Performance Report – proposal for studies of long-range correlations relevant to the initial stages of hadron-hadron collisions;
- 2006 – present: the scientific collaboration NA61(SHINE) at the SPS at CERN;
- since 2011 – present: participation in the R&D of new ALICE/ITS based on the novel CMOS pixel Si-detectors;
- since 2019 – the scientific collaboration MPD at NICA

3) Possible fields of activity in the SPD and participants:

- **Possible fields of activity:**

1) R&D on Si-pixel detectors for the SPD Vertex tracker

2) R&D on the MCP-based beam-beam collisions monitor and for SPD
("Fast beam-beam collisions monitor for experiments at NICA", NIMA62154, A.A. Baldin , G.A.Feofilov, P.Har'yuzov, F.F.Valiev, reported at the VCI-2019)

3) Experimental and theoretical studies of strangeness and heavy-flavour production mechanisms in hadron-hadron interactions at NICA energies

- **Participants:**

V.V.Vechernin,G.A.Feofilov,V.N.Kovalenko,F.F.Valiev,D.S.Prohorova, E.Andronov, V.I.Zherebchevsky + some students