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Grigory V. Trubnikov  
Director of the Joint Institute for Nuclear Research  
Dubna, Russian Federation

Dear Academician Trubnikov,

I strongly support the proposal for an extension of participation of the Joint Institute for Nuclear Research in the NA61/SHINE experiment at the CERN SPS (Theme 02-1-1087-2012/2024, the project leader Alexander Malakhov).

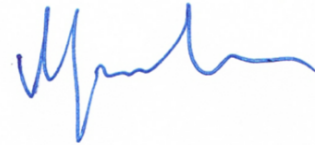
Since the beginning of NA61/SHINE, the Dubna group has actively participated in numerous aspects of its broad experimental programme, including heavy-ion, neutrino, and cosmic-ray physics measurements. Importantly, there are strong-interaction and neutrino physics and detector synergies between JINR and NA61/SHINE. This makes the collaboration between JINR and NA61/SHINE very efficient and strongly beneficial for both parties and heavy-ion physics in general. In particular, the JINR NICA and NA61/SHINE projects address key questions concerning the properties of the phase transition to quark-gluon plasma but use complementary experimental approaches: measurements in the collider mode of NICA and fixed-target measurements at SPS. On the detector side, the JINR-NA61/SHINE group is developing a new time-of-flight system based on Multigap Resistive Plate Chambers (MRPC). These detectors have been primarily developed for the NICA project. NA61/SHINE gives an important opportunity to test the detectors under physics data-taking conditions and deliver key physics results. Among the mentioned above, members of the Dubna group contribute to the NA61/SHINE neutrino program with measurement and analysis of the hadron production in h+A collisions. NA61/SHINE precise measurements allow the long baseline neutrino experiments (NOvA, T2K, DUNE) to reduce neutrino fluxes uncertainty. All these neutrino experiments are part of the neutrino program of JINR. This further demonstrates the synergy of the NA61/SHINE and JINR programs.

I am pleased to inform you that many young, talented physicists from Dubna work on NA61/SHINE. They are very well integrated into our activities and impressed us with high competence and engagement. I am sure they will greatly contribute to the future JINR heavy-ion and neutrino projects.

In conclusion, I am deeply convinced that long-term active participation of JINR in NA61/SHINE is well justified and deserves our strong support.

Sincerely,

Marek Gaździcki



Spokesperson of NA61/SHINE  
April 18, 2024



*NA61/SHINE is a particle physics experiment at the Super Proton Synchrotron (SPS) at the European Organization for Nuclear Research (CERN). The experiment studies the hadronic final states produced in interactions of various beam particles (pions, protons and beryllium, argon, xenon and lead nuclei) with a variety of fixed nuclear targets at the SPS energies. NA61/SHINE physics goals include: Search for the critical point of the strongly interacting matter, detailed study of the onset of deconfinement, hadron production reference measurements for neutrino and cosmic-ray experiments. About 150 physicists from 14 countries and 30 institutions work in NA61/SHINE.*

*NA61/SHINE web-site: <http://shine.web.cern.ch/>*