IPHC
Institut Pluridisciplinaire Hubert CURIEN
STRASBOURG

REPORT on « Experiment BECQUEREL at Accelerator Complex NUCLOTRON/NICA »

Christian BECK
Directeur de Recherches

Tél. : (33) 03 88 10 68 45
Secrétariat : (33) 03 88 10 64 55
Fax : (33) 03 88 10 66 16

The BECQUEREL experiment is already known as one of the world-class collaboration at the Flerov Laboratory of Nuclear Reactions (FLNR) to study light nuclei in the vicinity of the nucleon stability with relativistic heavy-ion beams. Several times BECQUEREL scientific presentations have already been highly appreciated by the Nuclear Physics PAC of JINR : the success of the Dubna group encouraged the PAC to recommend them to continue the international collaborations on Nuclear Track Emultions studies with teams from Europe on original experiments.

After the success of the previous projects of the BECQUEREL collaboration that were largely published in scientific journals as well as a Review paper in Lecture Notes in Physics, it appears evident that the Nuclear Track Emulsion technique for studying fragmentation of relativistic nuclei at NUCLOTRON/NICA needs to be used for future studies. In my opinion there are at least three very exciting topics that will have to be studied in the very near future with the greatest care ; i) the search for of condensaed states analogous to the Hoyle state in heavier nuclei than 12C and 16O, ii) the finding of new correlations that might ellucidate the long standing questions of the multi-fragmentation problem, Iii) the investigation of muon induce multiple fragmentation.

In conclusion, as the previous results of the BECQUEREL Collaboration were quite convincing for the whole nuclear physics community and whereas both the requested ressources and the time schedules of the Project «Experiment BECQUEREL at Accelerator Complex NUCLOTRON/NICA» appear to be very reasonable, the scientific programme looks very promising. I strongly recommend the Nuclear Physics PAC to support BECQUEREL with the HIGHEST priority.

Dr. Christian BECK
Directeur de Recherches CNRS
IPHC Strasbourg, Janvier 7, 2020

CNRS CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE
IN2P3 INSTITUT NATIONAL DE PHYSIQUE NUCLÉAIRE ET DE PHYSIQUE DES PARTICULES