

Presentation of Institute of Physics and Technology, Mongolian Academy of Sciences

Prof. Ts.Baatar

Laboratory of Theoretical and High Energy Physics,
Institute of Physics and Technology, MAS

Dubna
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About Institute of Physics and Technology, MAS

Our Institute is established in 1961. This Institute consists of 6 laboratories, number of research workers ~ 100 .

- 1 Functional material laboratory.
- 2 Laboratory of energy research.
- 3 Innovation and Technology laboratory.
- 4 Laboratory of electronics and photonics.
- 5 Laboratory of radiation biophysics.
- 6 **Laboratory of theoretical and High energy physics.**

Our research group physicists with work in the field high energy physics have an experience to carry out the multiparticle production process in hN , hA and AA interactions at high energies using ROOT program system.

List of participants

- Ts. Baatar, prof. Head of the research group
- G. Sharkhuu, Ph.D, Research worker
- B. Otgongerel, Ph.D, Research worker
- M. Sovd, Ph.D student
- M. Urangua, Master's student
- Master's student

Interested physics

- To the beginning of MPD experiment we will study the detector structure and working principles and also program environment.
- Total particle yields and yield ratios.
- Kinematic and chemical properties of the event.
- Mapping QCD Phase diagram.

Published papers

- Ts.Baatar, B.Batgerel, R.Togoo, B.Otgongerel, M.Sovd, B.Chadraa, G.Sharkhuu, A.I.Malakhov, N.G.Fadeev., "Study of the phase transition in $\pi^- C$ interactions at 40 GeV/c", PoS Baldin-ISHEPP-XXI (2012) 022.
- Ts.Baatar, B.Batgerel, R.Togoo, A.I.Malakhov, B.Otgongerel, M.Sovd, B.Chadraa, N.G.Fadeev, G.Sharkhuu., "A Possible Study of the Phase Transition of $\pi^- C$ interaction at 40 GeV/c", Dubna Preprints E1-2012-13.
- B.Otgongerel, Ts.Baatar, R.Togoo, A.I.Malakhov, G.Sharkhuu, M.Sovd, T.Tulgaa., "The hadron production in $\pi^- C$ interaction at 40 GeV/c and QCD phase transition", EPJ Web Conf. 138 (2017) 05002.
- M.Sovd, Ts.Baatar, A.I.Malakhov, B.Otgongerel, T.Tulgaa, G.Sharkhuu., "Half masses of particles produced in $\pi^- C$ interactions at 40 GeV/cc and phase transition", EPJ Web Conf. 204 (2019) 05011.

Published papers

- Ts. Baatar, B. Otgongerel, M. Sovd, G. Sharkhuu., "Connection between effective mass and target mass" Proceeding Institute of Physics and technology 47, (2020).
- M.Sovd, Ts.Baatar, A.I.Malakhov, B.Otgongerel, B.Batgerel, G.Sharkhuu., "Thermodynamic characteristics of particles produced in $\pi^- C$ interactions at 40 GeV/c as a function of the cumulative number and the van der Waals equation of state", in publication (Dubna Preprint).
- M.Sovd, Ts.Baatar, A.I.Malakhov, B.Otgongerel, B.Batgerel, G.Sharkhuu., "On the possibility of pion condensation from $\pi^- C$ interactions at 40 GeV/c", in publication (Dubna Preprint).
- M.Sovd, Ts.Baatar, A.I.Malakhov, B.Otgongerel, B.Batgerel, G.Sharkhuu., "Two different distance scales of q^2 and V_{QCD} potential of protons from $\pi^- C$ interactions of 40 GeV/c", in publication (Dubna Preprint).

Thank you!