



Universality of soft hadron spectra in pp and e+e-collisions

Saturday 7 July 2012 18:00 (1 hour)

The success in understanding dynamics of soft particles inside jets relies on calculations of perturbative QCD, impressive accuracy of which have already been tested experimentally. However, the theory predicts, that the inclusive particle spectrum inside jets is independent of a collision energy in the limiting case of zero momentum ($p \rightarrow 0$). In order to test this prediction, a systematic study of world experimental data from hadron and lepton colliders at the collision energies from tenth of GeV up to the TeV scale at the LHC has been performed. In this work we present the consecutive analysis which confirms these predictions at the momentum region above 0.5 GeV/c. We demonstrate that for the particle momenta lower than 0.5 GeV/c the experimental data break this tendency and show up a new behavior.

Financial Support Justification for Early-Stage Researchers

I am a final year PhD student working at the SUBATECH/IN2P3 laboratory, Nantes, France.

I am very interested in participating in ICHEP2012, because the topic of my PhD thesis is widely covered in the scientific program of the Conference.

I would be happy to present, for the benefit of the conference, the results I have obtained on soft hadron production in a form of an oral talk or a poster.

The wide coverage of topics in the scientific program of the Conference makes it very interesting and exciting to listen and participate in discussions.

I find it useful for broadening my general education in high-energy physics and new theoretical developments. This is also a perfect opportunity to discuss the newest results and perspectives with experts which will be gathered together in one place.

Due to limited funding in my laboratory, I would really appreciate any financial support from the Organizing Committee in waiving the conference fee or in covering meals/local stay to be able to attend the conference.

Summary

A part of the indicated studies was summarized in the article "Soft Hadron Production at the LHC" published in journal "Progress in Particle and Nuclear Physics" <http://dx.doi.org/10.1016/j.pnpnp.2012.01.006>. The complete study is preparing for publication and has not been presented before.

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