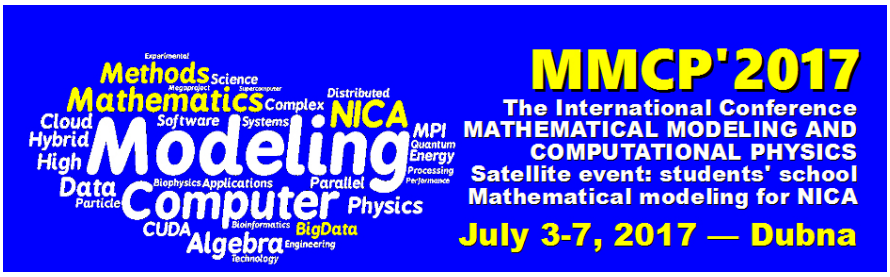

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Astroparticle Data Life Cycle Initiative

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Nowadays the exponential growth of the amount of experimental data can be observed. While there was 1-10 Tb of data per year in astrophysics 10-15 years ago, new experimental facilities generate data sets ranging in size from 100's to 1000's of terabytes per year.

It's obvious that various activities must be performed continually across all stages of the data life cycle to help support effective
data management: the collection and storage of data, its processing and analysis, refining the physical model, making preparations for publication, and data reprocessing taking refinement into account. An important topic for modern science in general and astroparticle physics in particular is open science, the model of free access to data. This approach is especially important in the age of Big Data, when a complete analysis of the experimental data cannot be performed within one collaboration.

The present project will strive to develop an open science system to be able to collect, store, and analyze astrophysical data having the TAIGA and KASCADE experiments as the examples.

This is an innovative approach that will be used in astroparticle physics research for the first time. Plans are underway to expand the number of experiments by exporting data from other scientific collaborations, it will rapidly advance the research of fundamental properties of matter and the universe.

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