

Online Masterclass built on the KASCADE Cosmic ray Data Centre

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What is this contribution about?

In this contribution we report about an online Masterclass we developed in November 2020 using real data from the KASCADE-Grande experiment which can be analysed by the students using Jupyter Notebooks.

Why is it relevant / interesting?

This Masterclass allows students to learn about the physics of Cosmic Rays and they can learn how scientists handle a large amount of data.

What have we done?

We set up the environment needed to allow the students to use Jupyter Notebooks and the KCDC data portal. Two tutorials are available for different levels of programming knowledge. The students learn how to plot data and interpret it and how we can derive the primary mass from the muon to electron ratio of an air shower.

We had our first online outreach event built on this masterclass with students from Austria who very much appreciated to get a sneak peek into how science is conducted.

What is the result?

The Masterclass tutorials and the Jupyter environment will be, and partly already is, available from the KCDC web portal <https://kcdc.iap.kit.edu>. This is open for use by institutes, schools and individuals and will be used in the future for further outreach activities at KIT.