Terascale Statistics School 2023

Type: not specified

Confidence Interval Estimation Part I

Tuesday 4 July 2023 11:15 (45 minutes)

Intricately linked with the estimation of parameters is the question on how to obtain meaningful uncertainties on the obtained parameters. In these two lectures, we will look at this problem in detail and discuss confidence intervals on extracted parameters. We will start with a simple case of a counting experiment following Poissonian statistics. This will lead us to the coverage of uncertainties, which we will use to study different estimators for the statistical uncertainty. We will continue with the more general case of how to obtain confidence intervals for a true parameter, given a measurement of a quantity related to this parameter. The lecture will cover confidence intervals close to physical boundaries and limit setting with the CLs method.

Presenter: KOGLER, Roman (DESY FH, CMS)