

Special Session on Uncertainties: Lecture on Errors on Errors

Thursday 4 April 2024 16:00 (1h 30m)

A statistical model is presented where the uncertainty in assignment of systematic errors is taken into account. Estimates of the systematic variances are modeled as gamma distributed variables. The resulting confidence intervals show interesting and useful properties, e.g., when averaging measurements to estimate their mean, the size of the confidence interval increases as a for decreasing goodness-of-fit, and averages have reduced sensitivity to outliers. The basic properties of the model are presented and several types of examples relevant for Particle Physics are explored. (Based on G. Cowan, Eur. Phys. J. C (2019) 79:133, E. Canonero et al., Eur. Phys. J. C (2023) 83:1100.)

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