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Data combination - introduction

Tuesday 29 March 2022 14:00 (45 minutes)

The lecture will address the topic of combining information from different sources in an analysis of Particle Physics data. The general formalism by which this is done in both the Bayesian and Frequentist approaches will first be reviewed. Combination of results relies fundamentally on constructing a likelihood that reflects all of the available data. Often this requires some approximations and assumptions as the detailed information needed to write down the full likelihood may not be available. An important aspect of combined (and individual) data analyses is the assignment of uncertainties to estimates to nuisance parameters. A method will be described by which uncertainties on the assigned uncertainties themselves can be incorporated, and the impact of this type of a model on combinations will be shown.

Link to the python code used for the example of a+bx fit:
https://www.pp.rhul.ac.uk/~cowan/stat/fitCombo.py
https://www.pp.rhul.ac.uk/~cowan/stat/fitCombo.ipynb

Presenter: COWAN, Glen (RHUL)

Session Classification: Data combination