2nd Pan-european Statistics School 28-30 March 2022

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Closing

Setting the scene

Typical HEP analysis: aiming at measuring a signal s over background b

Analysis flow



School topics



2. Data combination Form the legacy of experiments



Some take away messages from 2nd Pan-European adv. school on Stat. in HEP

Wolfgang Rolle (GOF tests):

- Do more than one GOF test (e.g. chi2 + AD)
- GOF tests for multi-D distributions are difficult

Larry Wasserman: (Optimal transport):

Powerful tool for horizontal template morphing

Mikael Kuusela: (Gaussian processes):

Versatile tool for multi-D modeling & regression for functions

Glen Cowan (Data combination):

- The **likelihood** is at the core of all data combination
- Often uncertainties are not precisely known → Errors on Errors method can help

Jan Kieseler (Data combination):

- preserve the systematic uncertainty contributions from each source
- Crucial to know & specify the systematic correlations of all input information
 - → **Conveno** tool allows to treat all kind of correlation structures

Lukas Heinrich & Carsten Burgard (What to publish):

- Don't publish profiled (or marginalized) Likelihood as function of POI, publish the full likelihood in the parameter space
- Publishing unfolded differential cross sections with their covariance matrix provides a nice compact detector independent representation of measured spectra



publish the full likelihood in the parameter space e matrix provides a nice compact detector independent



For getting feedback on how you liked the school we will create a survey in indico and send you a link



Thanks to all lecturers! Thanks to all participants!

Hope to meet you sometimes (again) in person!







