Forum on the Interpretation of the LHC Results for BSM studies

2nd workshop 12-14 Dec 2016, discussion & summary

Good progress since kick-off last June on:

- Correlation matrices, simplified likelihoods   [Nicholas Wardle]

- Using LHCb likelihoods   [Marcin Chrzaszcz, Nazila Mahmoudi]

- Standardised analysis description   [Sezen Sekmen, Joel Walker]

- Public tools: progress on existing frameworks, lots of new ideas using neural networks, machine learning, …   [Tuesday tools session]

- Interpretation studies already using 13 TeV results   [Tue+Wed interpretation talks]
  (some talks nicely discussed details of the re-interpretation)

Theory-experiment interaction:

- Great initiative by CMS SUSY group to make their results re-usable
  (hope that other search groups will follow up)   [Claudio Campagnari]

- Usage of SM, top, Higgs results for constraining BSM (would be very useful if Standard Model predictions were published on HepData along with the measurements)   [Darren Price] [Reza Goldouzian]

- Strong demand for digitised information, increased use of HepData

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Digitised information

- Documentation of tables and plots on HepData is extremely useful

  - make this as complete as possible

  - include expected signal from benchmark points (or SM expectation were relevant) used in the analysis

- Strong demand for making model input files, MC run cards, etc, available

- "Ask a Question" box now available on HepData; extend this to Q&A forum?

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Providing digitised information is `good practise' also for theorists
-> make your recast codes, derived efficiency maps, etc. publicly available with the paper publication.   [Jesse Liu, Ursula Laa]

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Suggestion by Sasha Belyaev to make repository of privately digitised plots of experimental papers on HEPMDB

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Feedback to experiments about (ease of) use of their results

- "Post-peer-review assessment" (J. Butterworth)

- Launchpad-like questions & answers forum?

How shall we realise this?

- One option is going through HepData, but that would cover only published results, no fast feedback on preliminary results (PAS or conference notes).

- Alternative: independent platform.

  + Can cover all results people have questions on

  - No automatic communication with experiment/analyser

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How to carry on

- Work in small teams on particular topics; documentation on twiki page

    https://twiki.cern.ch/twiki/bin/view/LHCPhysics/InterpretingLHCresults

- Make your own sub-page for your activity on the twiki

- Informal small sub-group meetings (example: LHADA)

- Next workshop after Moriond 2017; integration in Les Houches PhysTeV

- Dedicated longer meeting e.g. in form of a TH institute in 2017/18 ?

What are your suggestions on forum format, topics covered, interaction with experiments, meetings schedule, etc. etc. ?