Science & Technology Facilities Council
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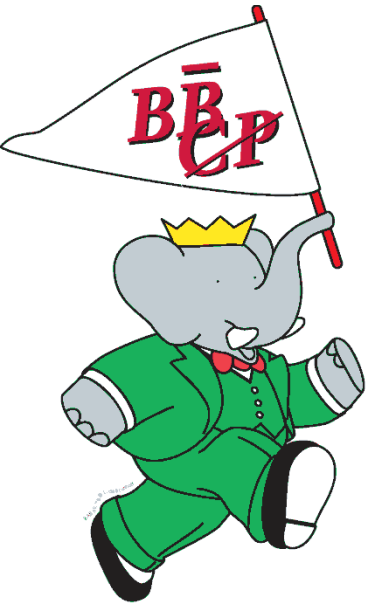
RooUnfold plans



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Unfolding Framework
Project Meeting
29th October 2010

Recent work

- Some small improvements in Subversion:
  - can pass histogram of floats (TH1F) or other types as input, not just doubles
  - include an optional interface to D'Agostini's Fortran routine for comparison with native C++ version
  - improve model of biases in test framework
  - new method for combining response matrix objects, eg. from multiple MC runs
- Should make a new release at some point

Future work

- Handle underflows and overflow bins for multi-dimensional histograms as well
- Calculate errors due to response matrix uncertainties from finite training MC statistics.
  - Provide a common option for specifying this.
  - Currently this is done for the SVD algorithm, and could be an option for the Bayes and TUnfold algorithms, but it is not enabled.
  - It could also be added to the toy MC error calculation.
- Propagation of errors doesn't give good results in many cases (Bayes, SVD, TUnfold)
  - Should the default be the errors from toy MC (much slower)
- Gero Flucke suggested to add an iterated bin-by-bin method
  - need details of the method
- Gero also suggested some better and more consistent naming for some of the RooUnfold methods and places where the object ownership model could be more consistent.
  - This needs some thought and a proper design
  - changes should be made so as to maintain compatibility where possible.
- Additional utility methods:
  - normalised response matrix with errors
  - explicitly include background events: measurements without truth
    - to complement Miss() method for truth without measurement