

CONFERENCE INTRODUCTION

This Conference follows on from the Confidence Limits Workshops held at CERN and at Fermilab in 2000. The talks at the CERN meeting can be found in the CERN Yellow Report 2000-005 or at:

<http://preprints.cern.ch/cernrep/2000/2000-005/2000-005.html>,

while those from Fermilab are at:

<http://conferences.fnal.gov/cl2k/>.

The proceedings of this present conference are to be found at:

<http://www.ippp.dur.ac.uk/statistics/proceedings.shtml>.

Whereas the earlier meetings concentrated just on the single topic of 'Limits', the scope of this Conference is broader, dealing with a much larger range of statistical questions of relevance for Particle Physics.

The structure of this meeting is as follows. We start with a morning session devoted to an overview of 'Principles of Statistics'. This is intended to be an introductory session explaining basic ideas. The Conference itself starts after lunch, and lasts for 4 days. The general idea is to concentrate on the statistical issues of relevance for our analyses, and hence the actual Physics will be de-emphasised. Some of the talks will be overviews of techniques, while others concentrate on very practical details of extracting answers.

Because we are in Durham, which has been at the forefront of work on parton distribution functions, there will be two talks on the statistical problems involved in extracting these distributions from data, one by a phenomenologist and the other by an experimentalist. On the second day, there will be a parallel meeting on the physics of parton distributions, focussing in particular on their uncertainties. This will be followed by an evening get-together over cheese and wine, for a more informal discussion of the issues.

The other topics that will be discussed include:

- Setting Limits
- Signal Significance
- Systematics
- Combining Results
- Unfolding Convolution
- Simulation Issues
- Multivariate Techniques for Separating Signal from Background
- and Blind Analyses

We are very pleased to have two statisticians with us for the Conference. They are Michael Goldstein and Wolfgang Rolke. The presence of statisticians was most beneficial at the CERN and FNAL Workshops, not only for helping us from making statistical errors, but also in providing systematic influences too. We look forward to their talks and their insights.

Since statistical problems in some aspects of Astro-Particle Physics can be very similar to those in typical accelerator experiments, it seems sensible to try to learn from each others experience. We thus have some Astro-Particle talks, and hope to increase the symbiosis at future meetings.

I hope everyone enjoys the meeting, and that we will all go away statistically enhanced.

Louis Lyons

