Modules: physics700 Elective Advanced Lectures

physics710 Experimental Physics

Course:



Statistical Methods of Data Analysis (E)

Course No.: physics716

Category	Туре	Language	Teaching hours	СР	Semester
Elective	Lecture with exercises	English	2+1		ST

Requirements:

Preparation:

Form of Testing and Examination:

Requirements for the examination (written): successful work with the exercises

Length of Course:

1 semester

Aims of the Course:

Provide a foundation in statistical methods and give some concrete examples of how the methods are applied to data analysis in particle physics experiments

Contents of the Course:

Fundamental concepts of statistics, probability distributions, Monte Carlo methods, fitting of data, statistical and systematic errors, error propagation, upper limits, hypothesis testing, unfolding

Recommended Literature:

- R. Barlow: A Guide to the Use of Statistical Methods in the Physical Sciences; J. Wiley Ltd. Wichester 1993
- S. Brandt: Datenanalyse (Spektrum Akademischer Verlag, Heidelberg 4. Aufl. 1999)