

## Preface

The first edition of the IN2P3 School Of Statistics gives an overview of the concepts and tools used in particle physics, astro-particle physics and cosmology when probabilities and statistics come to play. In particular, this first edition was dedicated to the use of multivariate discriminants in the framework of data analyses performed in collider physics. This school was targeted towards PhD students and towards more senior physicists, aiming at extending their knowledge and skills in the field of statistical tools and frameworks developed for their fields.

The school took place in Strasbourg at the Institut Pluridisciplinaire Hubert Curien (IN2P3) from 30th of June to 4th of July 2008. The lectures were subdivided into three parts: a part reminding the fundamental concepts used in Probabilities, Statistics and Hypothesis testing applied to physics analysis; a part focusing on the presentation of the most popular multivariate techniques and used in data analyses; and a part dedicated to frameworks devoted to the fitting and the interpretation of the results in the context of heavy flavor physics and cosmology theories.

The organizing committee would like to thank all the lecturers for their participation at this school and for their availability during the whole week. We are also very grateful to them for accepting to produce a full paper corresponding to their topics, which will serve as a reference document for future editions of the school.

The organizing committee would also like to thank Francois Le Diberder for initiating this idea of a School of Statistics devoted to high energy physics and his continuous support in the organization of this first edition. We also would like to thank Etienne Auge for helping us prepare the 2010 edition. We also thank our funding agencies, the Institut de Physique Nucléaire et de Physique des Particules (IN2P3/CNRS) and the Institut de Recherche sur les lois Fondamentales de l'Univers (IRFU/CEA), as well as the hosting laboratory for their strong support. We are grateful to Anne-Catherine Le Bihan, Christophe Helfer, Nicolas Rudolf and Leila Seifer for their help in the practical organization of the school.



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