Preface

The 3rd IN2P3 *School Of Statistics* gives an overview of the concepts and tools used in particle physics and astro-particle physics. In particular this third edition was dedicated to the use of multivariate discriminating tools in the framework of data analyses performed in collider physics. This school is targeted towards PhD students and towards more confirmed physicists, aiming at completing their knowledge and skills in the field of statistical tools and framework developed for their fields.

The school took place in Autrans, near Grenoble, from 28th of May to 1st of June 2012. The lectures were subdivided into three parts: a part reminding the fundamental concepts used in Probability, Statistics and hypotheses tests applied to physics analysis; a part focusing on the theory of multivariate discrimination followed by the presentation of two popular multivariate techniques widely used in data analyses: neural networks and boosted decision trees; and a part dedicated to framework devoted to the trajectography, unfolding techniques and setting limits with an application to Higgs boson searches.

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,

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