

NEW COMPUTING TECHNIQUES IN PHYSICS RESEARCH



Edited by
D. PERRET-GALLIX, W. WOJCIK

SOFTWARE ENGINEERING, ARTIFICIAL INTELLIGENCE AND
EXPERT SYSTEMS IN HIGH ENERGY AND NUCLEAR PHYSICS



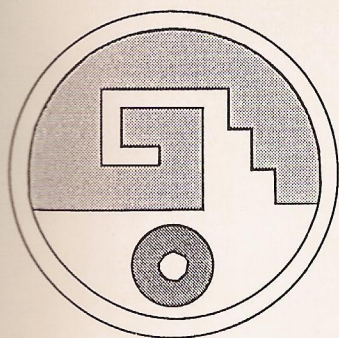
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PREFACE

Motivated by the increasing complexity of scientific research now entering an accelerating phase, and continuing with plans for LHC and BEP-II, the Workshop on Software Engineering, Artificial Intelligence and Physics was held in Lyon (France) in 1999.

Although the workshop was devoted to "hard sciences" such as space, atmospheric, and oceanic sciences, the problems and requirements. The workshop may be of interest to a wide range of scientists.

Physics simulations, experiments, data taking and data analysis, all require the use of computers and manpower resources of these resources nevertheless still lagging behind the requirements of the actual computing efficiency. The management and expert systems are the key to the success of these research activities. The workshop research environment and resources are needed to reach the expected level of activities.

The proceedings cover several topics: A) Software Engineering and Artificial Intelligence and methods needed to build large systems in a new way. Various approaches have been developed for specific developments in new technologies: multi-developer packages, Software Engineering, data management, interactive development.

Language such as C++, C, Fortran, and Java, and large packages development in the context of the workshop are presented.

B) Artificial Intelligence and its applications in the context of the workshop. The workshop is devoted to the development of new methods, new tools, new languages, and new paradigms for the development of the workshop.