FOREWORD

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During the last few years sector-focused cyclotrons have excited more and more interest in many laboratories all over the world. Many universities have such a machine, either completed or under construction, and many others are considering the possibility of having one. It was, especially in Europe, of considerable interest to establish an opportunity for an exchange of views and experience between scientists from the universities or laboratories concerned. We at CERN are happy to have been able to accomodate this third international conference devoted essentially to the subject of sector-focused cyclotrons. The astonishing development within this field, both regarding beam intensity and energy, is perhaps properly reflected by including the term "meson factory" in the conference title.

Sector-focused cyclotrons are very intricate machines presenting a considerable challenge to the inventive machine theorists and engineers. Present-day digital computer facilities are not only desirable but in fact necessary tools for the designer. The experience reported from the machines already built, proves that the theoretical work which has been performed to date, has been extremely useful. Machines work "easily", "according to computation", and thanks to the accuracy of these computations, they have been made remarkably reliable, flexible and versatile. This achievement is already a great incentive to machine builders, and the development of the theory has also lead to a better understanding of conventional cyclotrons, synchro-cyclotrons and of the extraction processes in all circular accelerators.

The sector-focused cyclotrons are perhaps less exciting than the very high-energy accelerators now being planned, but they are more of a human size and it is remarkable to see that after years of cyclotron development, still new techniques are invented and applied.