

FOREWORD

The XIII International Conference on Cyclotrons and Their Applications was held at the Hotel Vancouver in Vancouver, British Columbia, from July 6-10, 1992. This was the 20th anniversary of the Sixth Conference, held in Vancouver in July 1972, and TRIUMF was honoured to have been chosen to host the conference a second time. The purpose of this conference series is to provide a forum for communication between all scientists and engineers involved with cyclotrons -- designers, builders and users. The organizers have therefore been delighted with the very supportive response from the community: both the attendance (241) and the number of papers submitted (181) have broken the records for previous conferences held in North America. We were especially pleased to see so many delegates from eastern European and Asian countries. The number of industrial exhibitors (26) was also a very gratifying record.

These statistics indicate the continuing vitality of the field. Although the construction of large cyclotrons for nuclear and particle physics seems to be reaching the point of saturation, the demand for smaller cyclotrons for other applications, particularly radioisotope production, seems to be unquenchable. Moreover, the intense beams from cyclotrons have made possible the conception and construction of much more exotic post-accelerator projects -- pion and kaon factories, cooling rings and, most recently, radioactive ion accelerators. For cyclotrons themselves, the application of superconducting magnets and rf systems continues to provide a fruitful source of novel designs. The last word on cyclotron design seems very far from being spoken!

The conference itself consisted of 15 oral sessions, with 24 invited and 36 contributed papers, and three poster sessions, with 130 papers. For the purposes of the proceedings we have arranged all the papers in sections according to the topics of the oral sessions, so that oral and poster papers on the same topic appear together. The remarks of welcome by Professor E.W. Vogt, Director of TRIUMF, and those of the Conference Chairman following the conference dinner are also included.

The organizers are happy to acknowledge the official sponsorship of the conference by the International Union of Pure and Applied Physics, the Canadian Association of Physicists, and the American Physical Society, through its Division of Physics of Beams. They are also very grateful for financial sponsorship by the Natural Sciences and Engineering Research Council of Canada (speakers' travel expenses), by AECL Research (a major contribution to the conference dinner), and by TRIUMF (additional travel funds). The Welcome Reception was generously sponsored by Nordion, Inc., summer support for a student assistant was provided by Ebco, Inc., and individual coffee breaks were sponsored by Alphatech International and Group 3, Inverpower Controls, and Varian Canada.

The initial planning for the conference was helped enormously by advice from members of the International Organizing Committee. Here there was a big turnover in membership from the previous conference and this is perhaps a suitable place to acknowledge the cyclotron community's debt to those who stepped down in 1989 for their many years of service; B.W. Allardyce (CERN), A.H. Botha (NAC), Y.N. Denisov (JINR), J. Fermé (GANIL), H.L. Hagedoorn (TUE), E.J. Jones (Harwell), Y. Jongen (UCL), J.M. Loiseaux (Grenoble), M.L. Mallory (MSU), J.A. Martin (ORNL), J.H. Ormrod (AECL), C. Yang (IMP) and K. Ziegler (VICKSI). John Martin, in particular, has served the committee and community faithfully since the very first conference held at Sea Island in 1959. The new members have been M. Fruneau (Grenoble), S. Gales (Orsay), H. Homeyer (VICKSI), A. Joubert (GANIL), R. Maier (Jülich), N.K. Mukhopadhyay (Calcutta), R. Ts. Oganessian (LNR, Dubna), D.K. Olsen (ORNL), D. Reitmann (NAC), G.H. Ryckewaert (UCL), H.

Schmeing (AECL), U. Trinks (Munchen), B-W. Wei (IMP) and, temporarily, J.A. Nolen (MSU). Another batch of members have announced their intention of retiring following this meeting, and again we salute them for their many years of service: H. Blosser (MSU), V.P. Dmitrievsky (LNP, Dubna), W. Joho (PSI), H. Kamitsubo (RIKEN) and D.H. Youngblood (Texas A&M).

The detailed organization of the scientific program was of course the responsibility of the Program Committee, and here we are indebted to our colleagues David Clark, Werner Joho, George Mackenzie, Reg Richardson and Harvey Schneider for their hard work over the last year, both inside and outside committee meetings. For the smooth running of the program we are grateful to the session chairmen, who ran what must have been one of the most punctual conferences ever. But our most profound thanks must go to the 663 authors, without whom there would have been no papers and no conference.

For the smooth operation of all other aspects of the conference, we are indebted to the dedicated efforts of the Local Committee members and their helpers. The secretariat, responsible for registration, was led initially by Maureen Iqbal and subsequently by Pat Stewart, with the help of Deanna Warner. The pressure in this job may be gauged from the fact that Maureen apparently decided that it would be less trouble to look after a new baby! Peter Grant created and nurtured the all-encompassing data base, while George Ludgate has had the dual responsibilities of budget and printing. Special credit must go to David Ross for design of the conference logo. Lorraine King has handled all the abstracts and papers and been responsible for the production of the proceedings. Bob Laxdal has looked after the Data Sheets, providing new ones for storage rings and trying to make the cyclotron list as up to date as possible. Harvey Schneider was responsible for all equipment and arrangements at the hotel, including the computer terminal room, and also for arranging the poster sessions and for coordinating the post-conference tour to Seattle. Milos Zach organized the very successful industrial exhibition, which ran from July 6-8.

The all-important social events -- the welcome reception on Sunday, the tour of TRIUMF and salmon barbecue at the UBC Museum of Anthropology on Monday, the excursions on Wednesday afternoon and the conference dinner on Thursday -- were coordinated very effectively by Elly Driessen. The TRIUMF tour was organized by Paul Schmor with the help of numerous staff members. Special mention should perhaps be made of the intrepid leaders of the Wednesday afternoon excursions -- Klaus Reiniger who led a 250 km tour of coast and mountain scenery, George Mackenzie whose group were obliged to break into a 19th century fort in order to see it after closing hours, and Jack Carey who monitored the smooth operation of the bar during the boat cruise. No less than 31 participants reached the top of Hollyburn mountain, with the women's gold medal going to Helena Lindquist and the men's to George Hendry. Finally, our particular thanks must go to our own secretaries, Maureen White and Lynn DeCaire, for their outstanding efforts in handling multifarious matters over many months.

The International Organizing Committee met in Vancouver during the conference to consider the traditional questions of whether the conference series should be continued, and if so, where the next conference should be held. The first question was answered with a rapid and resounding yes. The second took longer to decide, because of considerable competition, but a clear majority emerged in favour of accepting the long-standing invitation from the National Accelerator Centre at Faure in South Africa. We therefore look forward to the 1995 conference being held in Cape Town, probably in April, under the chairmanship of Dr. D. Reitmann.

M.K. Craddock, Conference Chairman
G. Dutto, Program Chairman