

SYNOPSIS OF THE 1987 PARTICLE ACCELERATOR CONFERENCE

With over 1,100 participants the 12th Particle Accelerator Conference, held from March 15 through 19, 1987, in Washington, D.C., drew a record attendance for this series of biennial conferences, thus attesting to the good health of the field and to the interest it holds for engineers, scientists, and industry here in the U.S. and worldwide.

The conference was organized in 27 sessions: opening and closing plenary sessions, banquet session, and twelve each oral and poster sessions, four at a time held in parallel.

The 1987 conference continued the trend towards allotting an increasingly larger fraction of oral session time to invited talks, encouraging the poster format for contributed papers, a move that in the judgement of the Program Committee optimizes communications and transfer of information.

The opening and closing plenary sessions were, as usual, devoted exclusively to invited talks dealing with topics that in the judgement of the Program Committee were of particular interest and urgency: the forefront machines coming on line, the new construction projects and the proposals for the next generation of very big facilities, as well as highlights of accelerator technology and particle beam physics.

In the opening plenary session the audience thus heard from J. Rees about the effort to commission the Stanford Linear Collider (SLC), where despite some problems and with slight initial reductions in some performance parameters great strides are being made, through very hard work, toward the beginning of Z^0 physics at SLAC. R. Johnson reported on the Tevatron $p\bar{p}$ collider, highlighting antiproton accumulation in excess of 10^{10} per hour, record collider energies (900 GeV on 900 GeV) thanks to superconducting magnets, and steady improvement of accelerator performance with the CDF (Collider Detector Facility) already taking data.

The only new construction start in the U.S., the Continuous Electron Beam Accelerator Facility (CEBAF), is devoted to nuclear physics. Its key features, rf superconductivity, multiple beam recirculation, extremely good beam quality, as well as the project status were described to the audience by CEBAF Director H. Gruner. The final two papers of the opening session highlighted and brought into focus technology developments, and conceptual thinking, that alluded to themes that would be taken up again and in greater detail throughout the conference: free electron laser (FELs) presented by T. Marshall, and the quest for ever increasing energies and accelerating gradients, put into perspective by J. Lawson's reflections on possibilities and constraints in accelerating mechanisms.

The conference as a whole provided a wealth of information on accelerator work serving high energy physics, nuclear physics, and a large number of applications, including a discourse on the requirements of the often-debated, and to some, controversial application of accelerator technology in SDI (Strategic Defense Initiative).

Each conference has its particular emphases and foci that reflect what's going on in the field, filtered, admittedly, through the program committee's interest, tastes, and prejudices. Among the points of predominant visibility at this conference certainly were radiation sources, free electron lasers, and novel methods and linear colliders, topics that each had a fully dedicated oral session and accompanying poster sessions. Their fascination is easily understood in that they combine forefront accelerator technology and particle beam physics with great potential for applications that range from the very practical (as for compact light sources) to the most fundamental research (linear colliders).

These comments would be incomplete without extending thanks to Professor Panofsky, who addressed the gathering as banquet speaker with a talk entitled "Misperceptions About Arms Control." With impeccable clarity and unimpeachable logic he disposed of five often-repeated misperceptions that continue to impede progress in the arms control process.

The closing plenary session was devoted to big projects—those of a size that could make their realization as any single nation's venture doubtful. M. Tigner gave a good description of the current Superconducting Super Collider design while G. Brianti described CERN long-range planning, focusing primarily on the Large Hadron Collider. L. Lederman, the closing speaker, a long-time advocate of international collaboration, and on earlier occasions a World Laboratory (the VBA), concluded there were overwhelming physics reasons to promote the SSC strongly.

To conclude these comments, I would like to thank all those whose efforts and contributions made this conference possible and successful, in particular the Chairman of the Arrangements Committee, Louis Costrell from NBS; the Registration Chairman, George Sawyer from LANL; the Abstracts Editor and my administrative assistant, Annie Soltys from CEBAF; the proceedings editors Louise Taylor, LANL, and Eric Lindstrom, NBS; and finally Audrey Salkind in charge of the Social Program, as well as the Conference Chairman, Samuel Penner, NBS, and the Program Committee, who ably assisted me in putting together the program for the 1987 Particle Accelerator Conference.

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Program Chairman