INTRODUCTION TO THE CONFERENCE PROCEEDINGS

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In 1968, the sixth Conference on Proton Linear Accelerators was held at the Brookhaven National Laboratory, where these Conferences were originated in 1961 by John P. Blewett. The field of proton linacs has changed substantially over this period and so have the Conferences.

There were 107 participants from 28 institutions in Western Europe, Japan, Canada, and the U. S. and about 30 from BNL. We feel that this size is a maximum which can be handled and still maintain the informal atmosphere of the Conference. A definite attempt was made in this Conference to focus primarily on proton linacs, because the full week is hardly adequate to cover all aspects of proton linac theory and design in the detail which is appropriate for this Conference. However, it is important to avoid isolating proton machines from electron machines and this was accomplished with the cooperation of a number of electron linac experts.

Since the inception of this series of Conferences, the National Accelerator Conference, sponsored by the IEEE has become established. In order to keep the number of annual conferences within reason and to avoid duplication at conferences, it seems desirable to hold the Proton Linear Accelerator Conference on alternate years between the National Accelerator Conferences. Therefore, it is suggested that the next conference in this series should be held in 1970.

At the time of the first Proton Linac Conference in 1961, the highest energy produced by any proton linac was 68 MeV and the highest peak beam current was about 10 mA. There was much optimism about significant extensions in both energy and current but no construction of such linacs was planned. Now operating, are linacs with peak energy of 100 MeV or peak currents in excess of 100 mA.

At the time of this Conference in 1968, two proton linacs of the new generation are under construction; the 200 MeV injector for the AGS with a design peak current between 100 and 200 mA, and the 800 MeV meson factory at LASL with a peak current of 20 mA and a duty cycle between 6 and 12%. Also, construction of another 200 MeV injector will soon begin at NAL. A most ambitious project is in the proposal stage at Chalk River, a cw linac of 1 BeV at 65 mA. Several other linacs of this generation are being considered. Not only will these linacs make considerable extensions in energy and current, but the beam brightness is expected to be 10 to 100 times as large as for the older machines.

Looking to the next generation of linacs, there was discussion of superconducting linacs and the electron ring accelerator. It is clear, however, that these machines are still somewhat in the future.

We would like to take this opportunity to thank Dr. G. H. Vineyard for his remarks of welcome and to express our sincere appreciation to the many people, both BNL staff and visitors who helped to make the Conference successful. In particular, the session chairmen, W. B. Lewis, J. Dickson, L. Smith, E. A. Knapp, R. B. Neal, C. Schmelzer, I. Polk, and J. P. Blewett were most helpful.