

The Vivitron: Evolution of a Working Accelerator, T. FOEHRENBACHER, J. HEUGEL, E. JEGHAM, N. LAHERA, L. MICHEL, F. OSSWALD, R. REBMEISTER and the VIVITRON GROUP, IReS de Strasbourg - Although the first beams were accelerated in August 1993, the major scientific exploitation of the machine really got underway in 1996. During each of the two years since then, more than 3000 hours of beam on target were delivered to the scientific community, at terminal voltages between 8 and 19 MV. In parallel with the scientific programme, three important technical goals have been pursued. Firstly the installation of a completely digital control system has been carried out. This enables the storage of all of the accelerator's 1500 parameters, offers simpler operation and, in particular, allows a better understanding of the machine's behaviour. Secondly, the improvement of reliability through a more efficient gas-drying system has been completed. The third goal of better stability and good high-voltage performance has been partially achieved through the use of a more satisfactory charging system for the belt (installation of two down-charge power supplies inside the terminal) and the elimination of some electrically high-stressed regions. A 50% reduction of the resistance of the potential divider is scheduled this summer and should also contribute significantly to stability and high-voltage performance. Our R&D programme also involves the study of the breakdown of the machine's insulators as well as problems relating to the creation of discharges.