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**PROCEEDINGS OF THE FIFTH MODULATOR-KLYSTRON WORKSHOP
MDK2001 - HELD AT CERN, 26 - 27 APRIL 2001**

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WORKSHOP CHAIRMAN'S REVIEW

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CERN

We have had a very busy and extremely interesting two days at MDK-2001. Together we have taken the time to examine in some detail the different solutions and problems associated with proposed new generations of klystron-modulators needed for Future Linear Colliders, wherever they may be built. Experts have been discussing the considerable technical challenges that confront both the electronics industry and the designers of klystron-modulator systems that will be needed for these Multi-TeV linear colliders.

We have seen that the important issues of power efficiency, reliability, maintainability, compactness and integration into the accelerator environment will greatly impact the accelerator design and its final cost. Several different designs for solid-state modulators using thyristors, IGBTs and IGCTs are pushing hard at the technological frontiers, once firmly held by thyratrons and hard switching tube devices.

Very interesting proposals and results from working modulator prototypes were presented using induction or fractional turn pulse transformers and stacked layers of low voltage IGBT switches to produce narrow and fast rise/fall time systems. However, thyratron switches are still being considered for some very long pulse, high average current modulators, where operational experience with solid-state devices is at present missing.

New klystron designs for the different linear collider projects demonstrate some real advances in the state-of-the-art of klystron technology. Amongst these are X-band klystrons with PPM focusing and up to 75 MW of peak output power at high repetition frequency for the NLC project, a 10 MW peak power L-band MBK tube with milliseconds pulse width for the DESY project, a design for a 50 MW MBK tube also at L-band that could be used for CLIC, and a new broadband (10%), L-band klystron design for the CTF3 project at CERN.

There has been an enthusiastic and wide-ranging participation of the electronics industry at this workshop, and we are very happy to acknowledge their support. The already strong links that exist between accelerator research and industry have never been more important than they are in today's changing conditions. We hope that the technical paper presentation programme, the posters and the exhibiting possibilities made available have enabled new contacts to be made and old ones to be renewed by all participants.

To make any event such as this workshop successful there are always behind-the-scene groups of people who facilitate this task. I would like to thank the local CERN organising committee for all the hard work, the ideas and the following up of all the workshop aspects that has made this a memorable event. I thank the seven session chairmen who have kept the paper presentations on course during the sessions, and for their valuable reviews and technical comments as we finish this workshop. No event can be a real success without the commitment of the management of the host organisation. I would like to thank the Director of CERN Accelerators and the PS Division Leader for their contributions and support throughout this MDK-2001 workshop.

A future MDK workshop will report on the advances and discoveries made in klystron-modulator design and applied pulsed power technology for use in the future linear collider accelerators.

Discovery consists of seeing what everybody has seen and thinking what nobody has thought (Albert Von Szent-Gyorgyi, 1937 Nobel prize for Medecine).