Abstracts of selected research papers – Prof. D.U.J. Sonnadara

1

_____
_____

Online Trigger System to Select Particles Generated in High Multiplicity Environments

D. U. J. Sonnadara

Department of Physics, University of Colombo, Colombo 3, Sri Lanka

W. E. Cleland

Department of Physics, University of Pittsburgh, Pittsburgh, PA 15260, USA

S. A. Voloshin

Department of Physics & Astronomy, Wane State University, Detroit, MI 48201, USA

ABSTRACT

An online hardware/software trigger system was built and implemented, which is capable of tracking and identifying particles generated in high multiplicity environments. The hardware portion of the trigger generates the momentum of each track, while the software portion of the trigger finds the time of flight, permitting the particle identification. The electronic module developed for track recognition, based on 3000 series Xilinx Field Programmable Gate Arrays, were successful in recognising up to 2048 tracks in a $6.4\mu s$ time interval. The details of the trigger development and the online monitoring of the trigger performance are presented.

Department of Physics, University of Colombo.   Email: upul@phys.cmb.ac.lk