



Contribution ID: 146

Type: Oral

Precision Timing Using Composite Microchannel Plates

Thursday, 9 November 2023 12:00 (20 minutes)

We propose a technique to use composite microchannel plate detectors to measure the arrival time of particles. The resistive and electron multiplying functions of a microchannel plate can be constructed by thin coatings on many insulating substrates. Suitable substrates could produce the initial electrons for multiplication in situ. Such composite microchannel plates produced without fiber drawing could function as both absorbing and amplifying elements in a detector system. We identify requirements in the detector to achieve 1 psec time resolution by this method.

Early Career

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Session Classification: RDC11

Track Classification: RDC Parallel Sessions: RDC11: Fast Timing