



The **Center for Detectors** presents a talk in
the Detector Virtual Workshop



Candidate detectors for space-qualified time-resolved photon counting
Dr. Michael Krainak

Head of the Laser and Electro-Optics Branch at NASA-GSFC

(Please note that Dr. Krainak's presentation will be shown virtually at this location; the actual presentation will not take place on the RIT campus.)

Monday, April 23, 2012, 11:00 am – 12:00 pm, Innovation Center, Room 1600

Cookies & Coffee at 10:30 am

Presentation will be broadcast at: <https://connect.rit.edu/dvw>



Abstract

Photon-counting detectors are required for numerous NASA future space-based applications including science instruments and free-space optical communication terminals. We discuss several photon counting detector technologies that are under evaluation for possible deployment on the Ice, Cloud and land Elevation Satellite-2 (ICESat2) Advance Topographic Laser Altimeter System (ATLAS) and other future NASA science instruments and free space laser communication terminals. Minimizing space-based resources (size, weight, power and cost) is an important goal for all NASA science missions. The sensitivity of the present analog detectors is limited. The receiver performance can be improved by one to two orders of magnitude by using single-photon-sensitive detectors. Photomultipliers and avalanche photodiodes are the primary candidates.

About the Speaker

Michael Krainak received his BS in electrical engineering from Catholic University and MS and PhD in Electrical Engineering from Johns Hopkins University. He started his career as a telephone switch office field engineer for AT&T Western Electric. He worked for ten years at the National Security Agency in signal processing, Fourier optics, and microelectronic circuit design. For twenty years he has worked at NASA Goddard Space Flight Center (GSFC) on inter-satellite laser communications, lidar, and laser transceiver technology development. Dr. Krainak is presently the Head of the Laser and Electro-Optics Branch at NASA-GSFC.

About the Detector Virtual Workshop

The Detector Virtual Workshop is a year-long NSF-funded program dedicated to the advancement of UV/O/IR detectors. It brings together people from around the world to discuss detector technologies. For more information, visit <http://ridl.cfd.rit.edu/> and click on the DVW tab.