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The radio frequency photomultiplier tube and optical frequency comb: High resolution, high rate and highly stable timing technique for single photons

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The radio frequency photomultiplier tube (RFPMT) combines the picosecond timing resolution of a streak camera with the fast readout of a photomultiplier. It is an entirely new device, currently under development at Yerevan and Glasgow in collaboration with Photek Limited (UK). Combination of the RFPMT with the optical frequency comb results in a high resolution (1 ps), high rate (≥ 1 MHz) and highly stable (10 fs/hr) timing technique for single photons. Such a device potentially has a large range of applications in fields ranging from physics to biomedical imaging. The principles of operation of the RFPMT will be described and possible applications to ultra-precise measurements in Physics and to ultra-high resolution optical microscopy will be outlined.

Biography

Amur Margaryan has completed his PhD from Yerevan Physics Institute and continued studies in the field of Experimental Nuclear Physics at Yerevan Physics Institute; Serpukhov proton accelerator, Serpukhov, Moscow region; JLab, Newport News, VA, USA; MAX-lab, Lund, Sweden; and GRAAL experiment at European Synchrotron Radiation Facility in Grenoble, France. He is the Leading Scientific Researcher at A I Alikhanyan National Science Laboratory (Yerevan Physics Institute). He has published more than 150 papers in reputed journals. His current research interest is in Ultrafast Photon Detectors and Optoelectronic Devices.

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