

International Conference and Exhibition on **Mesoscopic & Condensed Matter Physics**

June 22-24, 2015 Boston, USA

Ultrasensitive far-infrared / THz detection with graphene photo detectors

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Graphene has recently been proposed as an ultrasensitive THz photon detector for space-based astronomy observations. We have studied the thermal properties of monolayer graphene for this application, and done extensive modeling of the detection processes. We employ superconducting contacts to achieve energy confinement in the graphene. Recently we have studied experimentally the energy loss processes in graphene down to $T=0.1$ K. The space-based observatories that could employ such detectors will be discussed, as well as the science that can be done with these observatories.

Biography

D E Prober is a Professor of Applied Physics and Physics at Yale University. He joined the faculty in 1975 as an Assistant Professor, after completing the PhD in Physics at Harvard. He was promoted to tenure in 1981. He received the A.B. in Physics from Brandeis University in 1970. His main research interests are in nanosystems, superconductivity, quantum noise and low temperature photon detectors.

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