

Title:

LiDAR and its Emerging Applications

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Abstract:

LiDAR has been in use since soon after development of laser in 1950's, as a sensor in several applications in remote sensing. The advent of autonomous vehicles, robotic vision, gaming, etc. has extended the range of LiDAR use from niche areas to new and high-volume applications. While all applications require similar sensing functions from LiDAR, each area typically has very specific needs with respect to performance, physical parameters of size, weight, and power, and even wavelength and mode of operation. In this talk an introduction to these applications will be followed by the types of LiDAR currently available, the state of the art, and those under development for the future. In particular, some general features of LiDAR for autonomous navigation will be described.

Biography:

Lute Maleki is currently at GM/Cruise Automation, responsible for the development of LiDAR for autonomous navigation. He was a founder, and President and CEO of OEwaves, Inc. and the CTO of Strobe, a company Spun out of OEwaves and acquired by GM/Cruise. Prior to joining OEwaves he was a Senior Research Scientist at the Jet Propulsion Laboratory (JPL) where he created and led the Quantum Sciences and Technologies Group for over 23 years. His research areas of interest at JPL included development of atomic clocks based on ion traps and laser cooled trapped atoms; ultrastable photonic oscillators, the opto-electronic oscillator (OEO), and photonic signal distribution systems; study and development of whispering gallery mode microresonators and their applications; development of sensors based on atom wave interferometers; and tests of fundamental physics with clocks. He is an inventor of over 60 U.S. Patents and applications, and has authored and co-authored over 120 refereed publications, and over 200 conference proceedings. Dr. Maleki is a Fellow of IEEE, a Fellow of the American Physical Society, and a Fellow of the Optical Society of America. Lute Maleki holds a B.S., M.S. and Ph.D. in Physics. He has received the IEEE Rabi Award, IEEE Sawyer Award and NASA's Exceptional Engineering Achievement Medal for the development of the Trapped Ion Frequency Standard.

