**Field test of semiconductor quantum light sources**

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Semiconductor quantum dots (QDs) are among the most promising quantum light sources, with the potential to revolutionize quantum communication research. For instance, utilizing on-demand single photons and entangled photons in quantum key distribution (QKD) protocols can significantly enhance security and increase the maximum tolerable loss. However, several critical challenges must be addressed to bridge the gap between laboratory experiments and long-distance field tests using QDs. In this talk, I will first review our work over the past years on QD-based single-photon and entangled-photon sources. Following that, I will present our recent field tests of single photon transmissions over a 79 km link between Hannover and Braunschweig, with 25.49 dB loss — equivalent to 130 km in direct-connected optical fiber.

穿西装的男孩

描述已自动生成**Short Bio:**

**Fei Ding is a full professor (W3 Chair in Nanophysics) at Leibniz University Hannover in Germany. Prof. Ding received BSc degree in 2003 from Hefei University of Technology. In 2009 he obtained PhD degree from the joint doctoral promotion program between Max Planck Society Germany and Chinese Academy of Sciences. From 2010 to 2012 he was a Marie Curie Fellow at IBM Zurich Research Laboratory. In 2012 he became a group leader in IFW Dresden and then in 2016 moved to Hannover as a full professor.**