

Graz Advanced School of Science
PHYSICS COLLOQUIUM OF THE UNIVERSITY OF GRAZ AND
THE GRAZ UNIVERSITY OF TECHNOLOGY

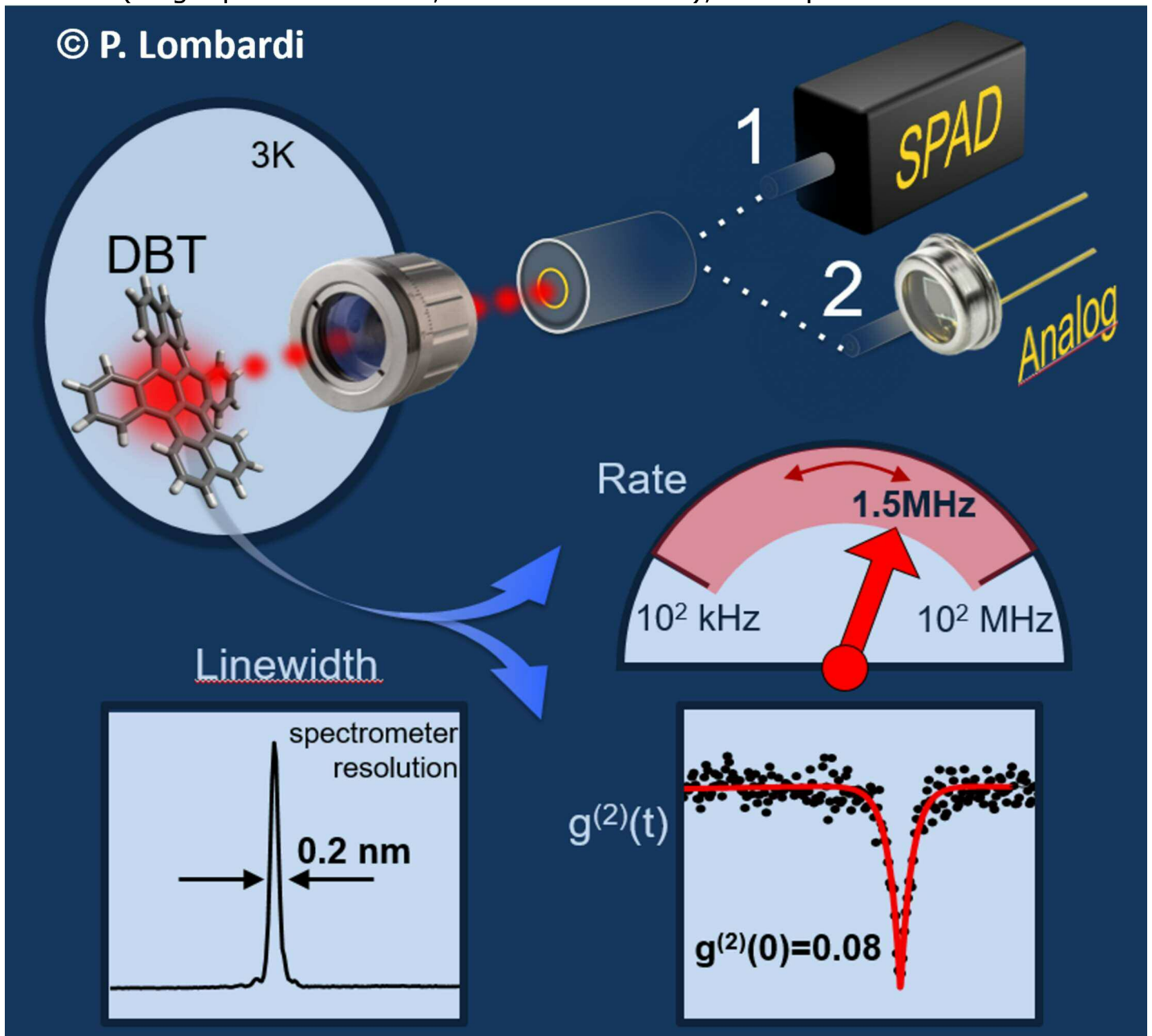
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Single-photon sources and detectors for quantum based radiometry

In this presentation, an overview of single photon sources and detectors is given with regard to their application in metrology, especially quantum radiometry. Single photon sources and detectors have a broad field of application, ranging from almost pure research areas such as quantum optics and quantum computing, to areas that have already entered the market such as quantum key distribution and quantum metrology, to already established applications such as single photon detection in medicine, biology and astronomy. Quantum radiometry (or: photon-based radiometry) is defined as the science of measuring radiation by counting (single) photons. Due to existing and expected applications, this metrological research area has recently gained increasing interest in a number of national metrology institutes. In this presentation, an overview of the current activities in the field of metrology for single photon sources and detectors is given. This concerns the realisation of different types of single photon sources, of absolutely characterised single photon sources and the current activities for the development of standard single photon sources. Furthermore, different types of detectors and their metrological characterisation, e.g. by using different radiation

sources (single photon sources, attenuated lasers), are reported.



Date: Tuesday, 10 January 16:15

Location: Lecture Hall 05.01, Institute of Physics, University of Graz, Universitätsplatz 5

Host: Sarah Lindner and Peter Banzer, KFU

For a regularly updated colloquium program see: <https://www.if.tugraz.at/colloquium.html>