



QP-TECH.EDU

Experimental Quantum Technologies

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*Hands-on Training – September 2024*

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Location:

Abbe Center of Photonics  
Albert-Einstein-Str. 6, 07745 Jena

Contact Person:

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Schedule	
Day 1: Entanglement and Superposition	
10:00	Meet at the ACP entrance
10:15 – 11:00	Overview of Quantum Science and Technology
11:00 – 13:00	<b>Lab: Single Photon experiments</b> <ul style="list-style-type: none"> <li>• Particle Nature of Photons</li> <li>• Quantum Random Number Generation</li> <li>• Single Photon Michelson Interferometer</li> <li>• Quantum Eraser</li> </ul>
13:00 – 13:45	Lunch
13:45 – 15:45	<b>Lab: Photon-pair experiments</b> <ul style="list-style-type: none"> <li>• Hong-Ou-Mandel 2-Photon Interference</li> <li>• Entanglement characteristics</li> </ul>
15:45 – 16:00	Coffee break
16:00 – 18:00	Quantum Cryptography

Day 2: Quantum Applications	
08:30 – 11:30	<b>Quantum Sensing &amp; Computing with Superconducting Quantum Devices (SQUIDs)</b> by Leibniz IPHT Jena
11:30 – 12:30	Lunch break
12:30 – 14:00	<b>Lab: Quantum Sensing</b> using Diamond Magnetometer <ul style="list-style-type: none"> <li>• NV Center Fluorescence</li> <li>• Optically Detected Magnetic Resonance (ODMR)</li> <li>• Spin Relaxation Time</li> <li>• Magnetic Field Sensing</li> </ul>
14:00 – 14:15	Coffee break
14:15 – 15:45	<b>Lab tours: Quantum Imaging</b> Extended hands-on lab session and discussions
15:45 – 16:00	Closing session