PhD Position
Implementation of optical approaches in microwave quantum memory systems

Project description:
A reliable quantum memory system is now actively searched for among different types of solid state systems. In particular, rare-earth doped spin ensembles, which possess favourable transitions in optical and microwave ranges, are promising candidates.

The current project aims at developing a quantum memory system based on rare-earth spin ensembles. Such quantum memory elements should work at zero magnetic field at ultra-low temperatures. The major task of the project is to implement optical techniques, such as spectral hole burning and frequency comb, into the microwave regime.

Experiments will be performed at temperatures below 1K in a dilution refrigerator at zero magnetic field.

The project is funded by Munich Center for Quantum Science and Technology and will be carried out at the Walter-Meißner Institut.

Keywords:
Rare-earths, cryogenics, spin ensembles, spin transitions, spectral hole burning, atomic frequency comb

Your profile:
We are seeking an enthusiastic person, who completes and advances our group.

Successful applicants should hold a Master or Diploma in Physics or Materials Science with honours, be highly self-motivated and team oriented.

Strong communication skills are expected. Fluent written and spoken communication in English is essential.

Programming skills on Python and Matlab will be advantageous.

Application:
Applications will be accepted from immediately until the position is filled.
Please send a short cover letter and CV directly to Dr. Nadezhda Kukharchyk
Email: nadezhda.kukharchyk@physik.uni-saarland.de

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<tr>
<th>Title</th>
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<tr>
<td>Employer</td>
<td>Walter-Meißner Institut</td>
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<tr>
<td>Job location</td>
<td>Garching, München, Germany</td>
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<td>Job types</td>
<td>PhD</td>
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<td>Salary</td>
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<td>Fields</td>
<td>Electromagnetism, RF electronics, Materials Physics, Cryogenics, Quantum Physics, Solid-state Physics</td>
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