



# TRR 80 Sonderseminar

Am Dienstag, den 30. April um 16:00 Uhr

spricht

***M.Sc. Leonard Wossnig***

**University College London**

über das Thema

## ***Quantum algorithms in a nutshell and beyond***

In this talk I'll give a broad introduction to quantum algorithms. I start with a recap of first principles, thereby briefly touching the origin of quantum speedups, move on to fast quantum routines for numerical linear algebra and explain how these can potentially be applied to machine learning and other areas. However, there are many caveats and a proper understanding of these is essential to apply the right algorithm at the right time. I will hence discuss these and draw parallels with classical state-of-the-art methods. Next, I'll discuss near term quantum algorithms for chemistry, and lead then directly over to so called quantum-classical hybrid algorithms, which are expected to be executed in the near and intermediate future. Here I will mostly focus on the variational quantum eigensolver and related techniques, and briefly touch on our recent result which overcame a major hurdle to make these algorithms practical. I finish by giving a final outlook for the field.

Gäste sind herzlich willkommen.

Der Vortrag findet im Seminarraum S-288, Institut für Physik,  
Universität Augsburg statt.

Gastgeber: Prof. Dr. Liviu Chioncel  
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