TUT 4: Tutorial Quantum Optimal Control

Time: Sunday 17:00–18:30 Location: ZHG105

Tutorial TUT 4.1 Sun 17:00 ZHG105

Quantum Optimal Control in a Nutshell — •Daniel Reich — Freie Universität Berlin, Dahlem Center for Complex Quantum Systems and Fachbereich Physik, Berlin, Germany

Since the start of the 21st century, research and development of technologies actively exploiting quantum properties of light and matter has experienced a surge in popularity. To this end, quantum optimal control is one of the main tools for devising concrete protocols to manipulate quantum systems in order to achieve specific tasks in the best way possible. In the first part of this tutorial I tell you about the main principles of quantum optimal control and provide a brief summary of the key techniques used in the field. In the second part I demonstrate the power of the quantum optimal control toolbox via practical use cases. Finally, I introduce some of the available software packages such that you can start controlling quantum systems, too.