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Machine Learning in quantum physics

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Machine learning is emerging as vital tool in many sciences. In quantum physics, notable examples are neural networks for the efficient representation of quantum many-body states and reinforcement learning of preparation and read-out routines. In this talk, I will present our results on machine learning of quantum phase transitions using classification techniques. This approach works very well even on noisy experimental data both with supervised and unsupervised machine learning. Next to the practical advantages, such techniques might in the future reveal phase transitions, for which conventional order parameters are not known.

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