

Towards an Artificial Muse for new Ideas In Quantum Physics

Speaker: Dr. Mario Krenn

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Date: Thursday 16th March 2023

Time: 16:15 o'clock.

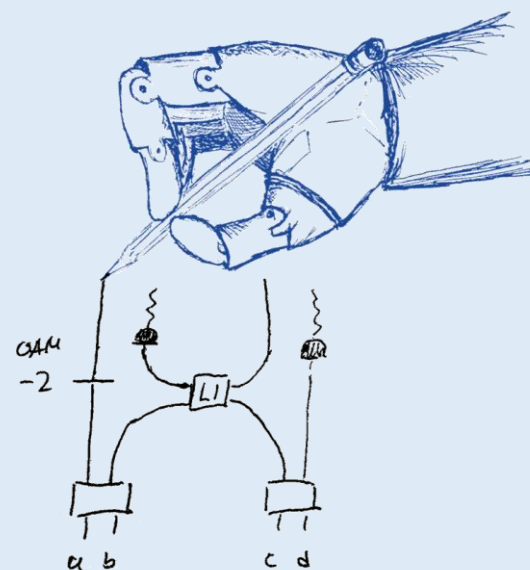
Location: Tietotalo TB109

hosted by Assoc. Prof. Robert Fickler



Abstract:

Artificial intelligence (AI) is a potentially disruptive tool for physics and science in general. One crucial question is how this technology can contribute at a conceptual level to help acquire new scientific understanding or inspire new surprising ideas. I will talk about how AI can be used as an artificial muse in quantum physics, which suggests surprising and unconventional ideas and techniques that the human scientist can interpret, understand and generalize to its fullest potential.



[1] Krenn, Kottmann, Tischler, Aspuru-Guzik, Conceptual understanding through efficient automated design of quantum optical experiments. *Physical Review X* 11(3), 031044 (2021).

[2] Krenn, Pollice, Guo, Aldeghi, Cervera-Lierta, Friederich, Gomes, Häse, Jinich, Nigam, Yao, Aspuru-Guzik, On scientific understanding with artificial intelligence. *Nature Reviews Physics* 4, 761–769 (2022).

[3] Krenn, Zeilinger, Predicting research trends with semantic and neural networks with an application in quantum physics. *PNAS* 117(4), 1910-1916 (2020).