COLLOQUIA DFA A.A. 2021-2022

A thought experiment to test the consistency of quantum theory

It is widely believed, at least among physicists, that quantum theory is rather universal. This means that the theory yields correct predictions not only when we apply it to microscopic, but also to macroscopic objects, such as Schrödinger's famous cat. But, even more extremely, these macroscopic objects may be agents who are themselves using the theory to make predictions. This immediately leads to the following consistency question: Is quantum theory able to describe agents who are using quantum theory? In this colloquium, I will present a thought experiment that leads to an answer to this question.

(The talk is based on a paper with Nuriya Nurgalieva, "Testing quantum theory with thought experiments", arXiv:2106.05314.)

Speaker:
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