QUESTIONS
DE RECHERCHE

18 octobre 2018
12h15-13h45 | salle B108

Image : Kaća Bradonjić, *Christian Wüthrich, "Quantum gravity: motivations and implications"*, 2016, peinture à l'eau et encre.

A world not in time? A world not spatial?

Prof. Christian Wüthrich

Département de philosophie

Quantum gravity attempts to fuse insights from quantum physics, which has so successfully contributed to our understanding of the constitution of matter, and from general relativity, our best theory of gravitation. This is necessary in order to describe the physics of black holes and the very early universe. Such a theory is of great interest to the philosopher of nature: the conceptions of space and time arising from our manifest image of the world have already been challenged by general relativity, and adding quantum effects to the mix promises to add significant complications. As it turns out, most approaches to quantum gravity suggest that our world is ultimately neither spatial nor temporal. How can one conceptualize such a non-spatiotemporal world? May necessary conditions for empirical research in a such world even be violated? How can space and time not be fundamental, but instead emerge from a non-spatiotemporal structure just as the liquidity of water emerges from molecules which are themselves not liquid? Using a concrete example of a theory of quantum gravity, I will explain--and answer--these questions.

Christian Wüthrich is associate professor of philosophy at the University of Geneva. He works in philosophy of physics, philosophy of science, and metaphysics. He holds an MSc degree in theoretical physics from the University of Bern, an MPhil in history and philosophy of science from the University of Cambridge (UK), and MA in philosophy from the University of Pittsburgh (USA), and a PhD in history and philosophy of science also from the University of Pittsburgh (USA). Before he came to Geneva in 2015, he was assistant professor and then associate professor at the University of California, San Diego. He is currently writing a monograph on the philosophy of quantum gravity.