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## **[Colloquium] Are there any fundamental problems with quantum gravity?**

*Tuesday, February 2, 2021 3:00 PM (1 hour)*

I plan to informally discuss several issues that have traditionally been raised in various approaches to quantizing gravity. They are invariably related to the concepts that are thought to be fundamental in one of the two theories (quantum and GR) but are (allegedly) at odds with the other one. I will discuss some of the key issues in my talk, such as Bell non-locality and the equivalence principle, only to conclude that they are, in my view, not fundamentally an obstacle. Lack of experiments, on the other hand, is a real obstacle, but, even here, we are closer than ever to being able to test the quantum nature of gravity in the lab. I will describe how.

**Presenter:** Prof. VEDRAL, Vlatko (Oxford)