



The (un)reasonable elusiveness of dark matter.

Tuesday, 09 September, 2025
Auditorium & Webcast 16:00 h

ZOOM ID: 996 1652 8733
Meeting Password: 733220

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Only about 15% of the total matter content of the universe consists of known forms of matter. After decades of experimental efforts, the leading hypothesis for the missing part - namely a new type of weakly interacting massive particle - is starting to become seriously pressured. As a result, the true nature of dark matter is more elusive now than ever.

In this talk, I will start with a pedagogic review of some of the most convincing pieces of evidence that we currently have for the existence of dark matter. I will then highlight new model building avenues that may explain why traditional searches have, so far, failed to see any signals. In fact, I will argue that it might well be generally impossible to directly detect or produce any dark matter particles in the laboratory - but that cosmological observations still have the potential to conclusively pinpoint some of their properties.

