



Tuesday

February 26

4:00 P.M.

Rm 118 NSH

Elementary Dark Matter

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One quarter of our universe is made of non-luminous matter. Through astrophysical observations, we have collected strong evidence that dark matter is essential for the cosmic evolution and the galactic structures that surround us. But what dark matter consists of, and how it might interact with visible matter, escapes our knowledge to date. Particle colliders offer an excellent opportunity to probe the elementary nature of dark matter under laboratory conditions. A central question in this endeavor is whether dark matter interacts with the Higgs particle that gives mass to visible elementary particles. I present a new search strategy for the Large Hadron Collider that allows us to probe even tiny dark matter couplings. To discover elementary dark matter, the results need to be interpreted together with complementary searches, which are operating both in space and underground. The abundance and high precision of data from particle and astrophysics experiments puts us in an unprecedented position to decipher the nature of dark matter in a joint effort.