



PHYSIKALISCHES KOLLOQUIUM

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EXPLORING THE DARK UNIVERSE

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There is overwhelming indirect evidence from astrophysics and cosmology that about 95% of the universe is dark. More than 25%, and thereby outnumbering ordinary matter by a factor of five, is made up by dark matter which builds large-scale structures. However, the dark matter particle, maybe realized as a Weakly Interacting Massive Particle (WIMP), remains unknown as of today. The search for WIMP dark matter with terrestrial detectors is currently led by ultra-sensitive instruments which use liquid xenon as a target. The XENON1T experiment at LNGS is the largest detector of this type and recently started data taking data. I will review the principles of direct WIMP searches, present the current status of the field and will show how we plan to cover the entire experimentally accessible WIMP parameter space in the next decades.