

## **Direct Detection of Dark Matter in the Milky Way**

*Prof. Dr. Laura Baudis*

*(Physik Institut, Universität Zürich)*

We have strong evidence that about 95% of matter in our Universe is dark, revealing its presence only by its gravitational attraction. In hierarchical structure formation, two macro-structures exist in the Milky Way: the dark halo, and the dark disk. If the dark matter in these structures is made of Weakly Interacting Massive Particles (WIMPs), it can be directly detected via elastic scattering from nuclei in ultra-low background, deep underground detectors. WIMPs arise naturally in many beyond standard model theories, a popular example being the neutralino, or the lightest supersymmetric particle. After an introduction to the direct detection method, I will review the current techniques to search for these hypothetical particles. The focus will be on recent results, and on the most promising techniques for the near future.