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## **Dark Matter direct detection: experimental review**

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The existence of dark matter has been discussed for more than a century. Today we have a compelling body of evidence for this elusive component of the Universe, based on a variety of observations, at different scales, but no experiment has detected dark matter yet. This talk will focus on direct detection of dark matter. The null result of both direct detection and LHC searches has produced a paradigm shift in the community that is now expanding the hunt to cover 90 orders of magnitude in mass. Current and next generation of detectors will push the sensitivity for WIMPs - the strongest dark matter candidate since the 1980s - down to the neutrino floor. In particular the physics case of different dark matter direct detection experiments will be presented and the different and complementary techniques which are being applied or considered will be discussed, summarizing their features and latest results obtained. A special focus will be made on TPC-related projects; experiments using noble liquids have presently a leading role to constrain interaction cross sections of a wide range of dark matter candidates and gaseous detectors are very promising to explore specifically low mass dark matter as well as to measure directionality.

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