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Dark Matter Searches with Liquid Noble Detectors

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Liquid noble detectors based on xenon and argon have provided the most competitive searches for WIMP dark matter with masses above a few GeV, having probed orders of magnitude in cross section over the past decades. With no direct evidence for dark matter, larger detectors are under construction and in design that can reach the neutrino floor, where coherent neutrino scattering will pose an irreducible background for the current technology. Within the next generation of experiments, WIMP cross sections down to the neutrino floor will be reached, potentially providing a dark matter discovery. Results from the most recent experiments, XENON1T, LUX, PANDAX, DEAP, and DarkSide50, will be presented, demonstrating the state of the art of these searches. The upcoming experiments, XENONnT and LZ will also be highlighted, including their discovery potentials. Finally, the prospects of generation 3 detectors based on xenon and argon will be presented, including the community-wide plan to reach the neutrino floor in the race to detect dark matter.