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Dark Matter Detection with Noble Liquids

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The field of dark matter direct detection has seen important contributions in recent years from experiments involving liquid noble gases, specifically liquid argon and liquid xenon. These detection media offer many properties deemed useful in this search, including fast scintillation response, charge readout, 3-D position reconstruction, and nuclear recoil discrimination. Part of the very rapid emergence and dominance of noble liquids is due to the fact that these technologies are easily scalable to nearly arbitrary size and mass. However, the physics impact of recent results has called into question our understanding of the low-energy response of these detection media, in light of apparent contradictions with a possible low-mass WIMP signal observed in the DAMA/Libra and CoGeNT experiments. I discuss recent results as they have been presented and examine the details of this inconsistency.

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Classification de Session: Astroparticles - Dark Matter

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