Signal Processing on Detectors filled with Noble Gas: the Direct search for Dark Matter and long Baseline Neutrino experiments

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Detectors using the liquid noble gases argon and xenon as detection medium are widely considered as the gold-standard instruments to search for very rare processes in astroparticle physics, such as the yet-undetected dark matter particle or neutrino interactions. Focusing on running experiments as examples, which either employ liquid xenon or liquid argon targets, the lecture will introduce to the physics motivation, the signal generation in the detectors, and how the signals are detected and processed.