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The gas phase of EXO, status and perspectives BASSAM AHARMIM, Laurentian University, EXO COLLABORATION — In my talk, I will be describing the R&D programs conducted at different EXO institutions to develop detector technology and analysis tools that will lead to a sensitive search for the neutrinoless double beta decay of 136Xe in the gas phase. The prototypes being developed consist of pressure vessels able to operate at pressures up to 10 bar. Different readout systems (a cathode-anode drift filed system, CsI pads, Micromegas...) are considered to detect the scintillation and ionization signals. Monte Carlo studies based on Geant 4, are used to help in optimizing the performance of the detectors. The prototypes will be used to evaluate and optimize the energy resolution and tracks reconstruction for background rejection. The longer-term goal is to scale up the technology to a multi-tonne detector.

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