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Sven Vahsen (U. of Hawaii): Status of the CYGNUS Directional Dark Matter Detector Project

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With WIMP-nucleon scattering limits approaching the neutrino floor, and coherent neutrino-nucleon scattering experimentally established, there is renewed interest in directional detectors as a means to penetrate the neutrino floor. The CYGNUS collaboration aims to deploy multiple gas Time Projection Chambers (TPCs) to accomplish this. I will review recent work carried out by the collaboration, including R&D on gas TPCs with negative ions drift and charge readout via micro pattern gaseous detectors, and a conceptual design study that compares the suitability of different technological approaches to a large-scale nuclear recoil observatory with sensitivity to both WIMP dark matter and neutrinos.

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