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Informing Next Generation Dark Matter and Neutrino Detector Designs with MiniCLEAN CHRISTOPHER BENSON, UC Berkeley, THE MINICLEAN COLLABORATION — Single phase, zero field, liquid noble gas scintillator detectors are a simple, scalable and cost effective approach for dark matter and neutrino detection. The operation of MiniCLEAN, a dark matter detector currently commissioning with a liquid argon target at SNOLAB in Canada, will help inform the design of a future multi-ton experiment. The technical objectives of MiniCLEANâ^{TM}s role as a technology demonstrator will be discussed.A key enabling technology for many detectors is the use of the common wavelength shifting medium Tetraphenyl Butadiene (TPB). Thin films of TPB are used to shift ultraviolet scintillation light into the visible spectrum for detection and event reconstruction. The wavelength shifting (WLS) efficiency and emission spectrum has been previously measured down to 120 nm. To build liquid noble gas scintillator detectors with lighter elements (Ne, He) that use TPB as a WLS medium, the wavelength shifting efficiency must be known closer to 80 nm. The current status and preliminary results of wavelength shifting efficiency measurements down to 45nm will also be presented.

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