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Neutron Imaging with the Double Chooz Time Projection Chamber XAVIER HUBBARD, MIT Laboratory for Nuclear Science — Detecting and understanding neutron background is important in many fields, including dark matter and neutrino physics research. DCTPC or the Double Chooz Time Projection Chamber will be used to detect fast neutron events and increase neutrino measurement precision in the Double Chooz experiment. The neutrons are detected by amplifying the ionized particles that are produced when a neutron collides with one of the atoms in the chamber. The amplified ionization can be seen as a "track" which is then captured by a CCD camera and sensing electrode. This technique allows us to not only detect the neutron events but also to measure their direction and energy. I will discuss current progress on the running of the DCTPC prototype, the construction of the primary DCTPC detector, and the most recent results.

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