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# Analysis overview of the NeuLAND demonstrator with use of the VETO detector.

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NeuLAND is the neutron detector for the R3B experiment at the FAIR facility. It is a fully active detector composed of plastic scintillator bars. Neutrons are detected by the production of charged particles in the scintillators through hadronic scattering. These charged particles are then detected by their scintillation light. Due to the highly granular design of NeuLAND, the primary neutron interaction points can be accurately reconstructed. These reconstructed points allow for kinematically complete reconstruction of reactions with relativistic heavy-ions beams, the goal of the R3B experiment. A demonstrator version of NeuLAND has been used in several experiments of the SAMURAI collaboration, including the recent tetraneutron experiment carried out in June and July 2017. For this tetraneutron experiment, an analysis tool called the NeuLANDConverter was developed. The NeuLANDConverter covers the full analysis procedure from raw TDC and QDC data to the reconstructed primary neutron interaction points. Moreover, it filters out the background by using the information from the NeuLAND VETO wall. The NeuLANDConverter provides output in the R3BRoot data format. This output was also added to the SAMURAI Merger, a program developed by the SAMURAI analysis team to gather the analysis results of all detectors in the setup. In this contribution, a complete overview of all analysis performed by the NeuLANDConverter is given.

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