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DEAP-3600 trigger - the needle in the haystack

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DEAP-3600 is a dark matter experiment based at SNOLAB. It uses 3600kg of liquid argon as a target, and searches for scintillation light from argon nuclei struck by weakly interacting massive particles (WIMPs). Argon-39 atoms also undergo beta decay, and the recoiling electrons also produce scintillation light. Beta decays are expected to occur at least 10^8 times as frequently as WIMP interactions, and the DEAP-3600 trigger is critical in filtering out the vast majority of background events, while keeping 100% of signal events. This talk will explain the very flexible trigger scheme that was developed, and will detail the commissioning and optimisation of the system.

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