

we understand accounts
for only 5% of the matter and energy in the universe, the search is on for the mysterious dark matter,
that is said (WIMP).

Large Underground Xenon (LUX), a 370 kg two-phase (liquid/gas) xenon time projection chamber
operating at 4850 feet underground at the Sanford Underground Research Facility (SURF), has recently
completed its operation, setting the world's best limit on the WIMP-nucleon cross-section. This thesis
presents the research and development of a novel, FPGA-based, triggering system. This system is often during the

for fully remote operation,
minimizing the personnel needs deep underground. For this type of detectors, this triggering system has