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PO FSE ABRUZZO
2007»2013 | OBIETTIVO
"Competitività regionale
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CFA lecture series

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The XENON Dark Matter Program at LNGS: where we are, where we are going

- ABSTRACT -

I will review the development and scientific results of the XENON Dark Matter Experiment which has been ongoing at LNGS since 2005 with the goal of searching for dark matter WIMPs with liquid xenon as target and detector material. With detectors of increasing target mass and decreasing background, the XENON program has achieved competitive limits on WIMP-nucleon interaction couplings, but also on axions and axion like particles. With the start of the next generation experiment, XENON1T, expected in 2015, XENON will continue to lead field of dark matter direct detection. XENON1T will be the first experiment to use multi-tons of liquid xenon in a time projection chamber and is designed to achieve two orders of magnitude higher sensitivity than the current best limits.

LNGS - "B. PONTECORVO" ROOM
SEPTEMBER 1ST, 2014 – 2:30 PM