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Highly radio-pure NaI(Tl) for PICOLON dark matter search experiment

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The positive observation of dark matter by the DAMA experiment has to be re-examined by a NaI(Tl) detector since there are multiple negative results shown by Xe experiments. The PICOLON experiment is trying to observe dark matter with multiple highly radio-pure NaI(Tl) scintillator detectors.
In recent a couple years, 3"φx3"and 4"φx3"detectors were constructed for future target of 5"φx5"detectors. Different resins were applied for purification of NaI powder in order to remove Pb, Ra and K, also the housing material screening and purification was performed. Significant reduction on U and Th chain radio-impurities including ^{226}Ra and ^{210}Pb, as well as on ^{40}K. The background rate below 10keV is mainly suppressed to approximately 4 DRU.
The latest 4"φ detector background analysis, sensitivity of the detector to dark matter and next plans of the experiment will be reported in this talk.

Primary authors: TAKEMOTO, Yasuhiro (Osaka Unversity); FUSHIMI, Ken-Ichi (Tokushim University); ORITO, Reiko (Tokushima University); KANZAKI, Gakuji (Tokushima University); KOZLOV, Alexandre (Tokyo University Kavli IPMU (WPI)); CHERNYAK, Dmitry (Tokyo University Kavli IPMU (WPI)); HAZAMA, Ryuta (Osaka Sangyo University); INOUE, Kunio (Tohoku University); IKEDA, Haruo (Tohoku University); TERAOKA, Yuri (Tohoku University); HIRATA, Akiko (Tokushima University); EJIRI, Hiro; YOSHIDA, Sei (Osaka University); UMEHARA, Saori (Tohoku University); SHIMA, Tatsushi (Research Center for Nuclear Physics, Osaka University); IMAGAWA, Kyoshiro (I.S.C. Lab); YASUDA, Kensuke (I.S.C. Lab)

Presenter: TAKEMOTO, Yasuhiro (Osaka Unversity)

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