

Dark matter search project PICOLON ~Present status and future~

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The PICOLON project aims to search for cosmic dark matter candidates by means of highly radiopure inorganic crystal. Present detector is NaI(Tl) since it is needed to verify an annually-modulating signal in low energy region below 6 keVee. The annual modulation which is supposed to be a WIMPs signal has been observed only by DAMA/LIBRA group. All other groups which applied other target nuclei excluded the modulating signal. The annual modulating signal must be verified by using the same target nuclei and more sensitive detector. A large mass (~250 kg) and high purity (less than 1dru) is indispensable properties to find a significant signal of dark matter. The PICOLON group has concentrated to reduce radioactive impurities in NaI(Tl) crystal and developed highly radiopure NaI(Tl) crystal. The present status of impurities in NaI(Tl) crystal, basic properties (energy resolution and energy threshold), background component, and the future plan of PICOLON project will be described.

Primary author: Prof. FUSHIMI, Ken-Ichi (Tokushima University)

Co-authors: Prof. KOZLOV, Alexandre (Kavli IPMU, Univ. Tokyo); CHERNYAK, Dmitry (Kavli IPMU, Univ. Tokyo); Prof. IKEDA, Haruo (RCNS, Tohoku Univ.); Prof. EJIRI, Hiroyasu (RCNP Osaka University); Ms HATA, Kazumi (Graduate School of Integrated Arts and Sciences, Tokushima Univ.); Mr YASUDA, Kensuke (I.S.C.Lab.); Prof. INOUE, Kunio (RCNS, Tohoku Univ.); Dr IMAGAWA, Kyoshiro (I.S.C. Lab.); Prof. ORITO, Reiko (Tokushima University); Prof. HAZAMA, Ryuta (Graduate School and Faculty of Human Environment, Osaka Sangyo Univ.); Prof. UMEHARA, Saori (RCNP, Osaka Univ.); Prof. YOSHIDA, Sei (Dept. Phys. Osaka Univ.); Ms HIRATA, Shoko (Graduate School of Integrated Arts and Sciences, Tokushima University); Prof. SHIMA, Tatsushi (RCNP, Osaka Univ.); Prof. TAKEMOTO, Yasuhiro (RCNP, Osaka Univ.)

Presenter: Prof. FUSHIMI, Ken-Ichi (Tokushima University)

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