



Poster session 2 – Tuesday 5 July

P2.084 Direct detection of the cosmic neutrino background

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Both active and sterile sub-eV neutrinos can form the cosmic neutrino background in the early Universe. We consider the beta-decaying (e.g., ${}^3\text{H}$) and EC-decaying (e.g., ${}^{163}\text{Ho}$) nuclei as the promising targets to capture relic neutrinos in the laboratory. We calculate the capture rates of relic electron neutrinos and antineutrinos against the corresponding beta decay or electron capture (EC) decay backgrounds in the $(3+N_s)$ flavor mixing scheme, and discuss the future prospect in terms of the promising PTOLEMY project. We stress that such direct measurements of hot DM might not be hopeless in the long term.