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【438】 A Study of Annual Modulation of the Rate of Beta Decays

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Although radioactivity is generally assumed to be explained by a Poisson process, with no dependence on atmospheric or cosmological conditions, there have been some indications of time-dependent decay rates and theories including neutrino-induced rate variations. We have developed an experiment dedicated to the long-term measurement of beta decays using NaI(Tl) detectors. Two detectors for each of four sources at four different locations covering both hemispheres as well as continuous monitoring of environmental conditions will allow us to identify and correct for systematic influences. This will give a precise measurement of the sources' half-lives and put strong constraints on the size of annual modulations.

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