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Atomic effects in reactor antineutrino spectra calculation

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To predict and interpret the results of reactor antineutrino experiments, precise theoretical knowledge of the antineutrino spectrum is needed. Reactor antineutrinos are produced in beta-decay of fission products, so, in general, any correction to individual beta-spectra will show up in the resulting antineutrino spectrum. We discuss the influence of atomic effects (such as screening, exchange and excitation) on reactor antineutrino spectra. We note that these effects may be particularly important for the conversion method, which is based on the transformation of experimental electron spectra.

Primary author(s) : TITOV, Oleg (NRC "Kurchatov Institute"); LOMONOSOV, Alexandr (NRC "Kurchatov Institute")

Presenter(s) : TITOV, Oleg (NRC "Kurchatov Institute")

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