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# Transition Radiation by (Standard Model) neutrinos

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We calculate the transition radiation process $\nu \to \nu\gamma$ at the border of two different mediums. The neutrinos are taken to be with only standard-model couplings. The medium fulfills the dual purpose of inducing an effective neutrino-photon vertex and of modifying the photon dispersion relation. We find that the probability of transition radiation is larger by three orders of magnitude (using the medium induced neutrino-photon vertex) than previous calculations (using vacuum induced vertex). The transition probability is about $10^{-18}$ for the electron density typical for neutron stars surface.

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