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# Neutrinoless double electron capture under X-rays

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We consider possible effect of electromagnetic radiation on the neutrinoless double-electron capture – 0ν2ec. For cases of X-ray free electron lasers – XFEL and/or inverse Compton X-ray sources it is shown that such a decay can be significantly enhanced due to tuning the system to the resonant conditions through an absorption and/or emission of a photon with the decay resonance defect energy Δ . For a case of 78Kr ⟶ 78Se – 0ν2ecL1L1 capture we demonstrate a possibility of increasing decay rate to ten orders of magnitude or even larger.

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