



24th February 2021 - 2:00 p.m.

[Virtual meeting room in ZOOM](#) (ID: 992 7237 2470 / PW: 755622)

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Two-photon cross sections for non-sequential absorption in argon and germanium

At high photon energies photoabsorption cross sections decline rapidly, therefore the measurement of nonlinearities in the x-ray regime is still a relatively rare occurrence made possible by the development of high intensity x-ray radiation sources. The process of non-sequential multiphoton absorption is usually accompanied by a variety of processes involving the absorption of single photons. Accordingly it has to be differentiated from them carefully. I have theoretically examined two FEL experiments, one of which was conducted at the European XFEL (Ar), while the other one was conducted at the LCLS (Ge), where non-sequential two-photon absorption in the x-ray regime was suspected. I will present the theoretical framework of Time-Dependent-Configuration-Interaction-Singles (TDCIS) that I have employed and discuss the non-sequential two-photon absorption cross sections that I have obtained numerically.