

## Attosecond X-ray Free-Electron Lasers

*Monday, November 4, 2024 1:00 PM (30 minutes)*

‘Seeing means believing’ as the old axiom says. Every year around 50 000 scientists worldwide use X-ray photon beams at synchrotron and X-ray Free-Electron Laser (XFEL) facilities to image the structure and motion of matter. X-ray studies on protein crystallography and X-ray driven catalysis in biomolecules became reality with the development of synchrotron light sources. The advent of XFELs has enabled biological imaging with femtosecond X-ray pulses, which is nowadays a key instrument for structural biology. Recently, attosecond lasing was demonstrated at several XFELs and first user experiments on charge migration and photoionization started. In this talk, I will discuss the present state-of-the-art of ultrashort pulse generation in XFELs and review some recent technological developments.

### Type of presence

Presence online

**Primary author:** Prof. GORYASHKO, Vitaliy (Uppsala University, Sweden; RIKEN, SPring-8, Japan)

**Presenter:** Prof. GORYASHKO, Vitaliy (Uppsala University, Sweden; RIKEN, SPring-8, Japan)

**Session Classification:** Exploring Ultrafast Phenomena with the XFEL: Instruments, Capabilities, and Applications

**Track Classification:** USyNC Workshop