



**09<sup>th</sup> May 2014 – 14:00**  
CFEL bldg. 99 , seminar rooms I-III

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## X-ray driven electron and ion dynamics in atomic and molecular clusters

Atomic clusters were among the first targets in upcoming X-ray free-electron lasers. Rather than just bridging the gap between point-like atoms and extended solids they possess unique properties which do not appear in either of the limiting cases. Albeit the interaction with short-wavelength radiation occurs locally with core electrons the high atomic density in finite systems, like clusters, has profound consequences. I will discuss some of them, e.g. the formation of novel nano-plasmas, massively parallel ionization (see figure), energy bunching in Coulomb explosion or the dynamical segregation in molecular systems. Although the dynamics is a complicated many-particle process it can sometimes be described by simple analytical models.

