**Femtosecond x-rays from laser-plasma accelerators**

X-ray radiation has been, ever since its discovery over a century ago, one of the most effective tools to explore the properties of matter for a broad range of scientific research. Successive generations of radiation sources have been developed, providing radiation with always higher brightness, shorter wavelength, and shorter pulse duration. Despite remarkable progress on x-ray generation methods with conventional accelerators, there is still a need for light sources delivering femtosecond pulses of bright high-energy x-ray and γ-ray radiation, emitted from source size of the order of a micron. Indeed, the intense activity on the production of such radiation is motivated by countless applications in fundamental science, industry, or medicine

Alternative and complementary methods based on laser-produced plasmas have recently been developed to produce ultra-short compact radiation sources covering a wide spectral range from the extreme ultraviolet to the γ rays. With a high-intense laser pulse impinging on a suitable target, a plasma is formed out of which charged particles, for example electrons, can be accelerated to energies of several 100 MeV. Based on the radiation emitted by such electrons, these sources have the common properties to be compact and to deliver collimated, incoherent, and femtosecond radiation.

Goal of the working group is to outline an experiment on laser-induced generation of short-pulsed synchrotron radiation, making use of so-called wake-field electron acceleration by a multi-TW laser and innovative target concepts.