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Overview of betatron radiation sources and applications

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The x-rays produced by laser wakefield accelerators have a unique combination of properties: they have an ultrafast duration, smooth broadband spectrum and emanate from a micrometre sized source. They are also readily co-located and synchronised with laser driven experiments. These properties make them well suited to a range of applications including high energy density physics.

This talk will provide an overview of x-ray generation by laser wakefield accelerators, including how the x-ray energy and brightness vary with the drive laser properties. I will also discuss progress in experiments which use betatron radiation for applications including tomographic imaging, imaging dynamic objects and x-ray absorption spectroscopy.

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