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Electro-optic detection of Longitudinal Bunch Profile Measurements at FLASH

We have installed an electro-optic experiment for single-shot, non destructive measurements of the longitudinal electric field charge distribution of individual electron bunches at FLASH, DESY. The electron bunch profile is encoded on a stretched Ti:Sapphire laser pulse through the interaction of an electro-optic crystal. This profile is retrieved from a cross-correlation of the encoded pulse with a 35 fs laser pulse, obtained from the same laser. At FLASH, sub- 100fs electron bunches have been measured during FEL operation with a resolution of better then 50 fs. We have also benchmarked this measurement with a transverse deflecting cavity.

Talk, Poster, or Talk & Poster

Poster

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