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## The spatio-temporal coherence and x-ray wavefront investigation at the European XFEL

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The effect of pulse wavefront (WF) distortion ranges from change in the radiation deposition mechanism, to inability to reach diffraction limited foci, and limitations in spectral correlations between spectrometers. The effect goes well beyond 'bad quality' beam and may determine the capability and the scientific goal of the experiment altogether. At the same time, the technique used to resolve such WF distortion in high resolution is equally an excellent tool in monitoring the changes in the sample internal features. At European XFEL several studies are proceeding in parallel to handle the issue. Here are some of the visual and experimental confirmation of the effect of WF distortions under various contributors, its detection methods and the impact on experimental results for near-distortion-free pulses.

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