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Impact of the Turkey/Syria Earthquake on the Synchronization Systems at EuXFEL and FLASH

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During the last decades, the precision of the measurement of length variations has increased drastically to reach the nanometer scale, or a sub-femtosecond timescale, based on transit time-stabilized optical fibers using femtosecond laser pulses. Thanks to the high precision of the stabilization system, the influence of different perturbations can be investigated, such as environmental changes (temperature, relative humidity, and air pressure) or density modulation (acoustics, ground motion). We report here on the detection of the earthquake of magnitude 7.8 on the Richter scale happening at 1:17 am (UTC) on February 6, 2023, in Turkey and Syria using the optical synchronization systems of the EuXFEL and FLASH.

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