Ultrahigh speed imaging by multiplexed ptychography

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Abstract: I will describe a new type of microscope for recording dynamics of non-repetitive events that is based on time-resolved imaging by multiplexed ptychography. In our microscope, time-resolved complex-valued multiple frames of the object are recovered algorithmically from the data measured in a single CCD exposure of a ptychographic imaging system. I will present the development and applications of the microscope.