Faster than Exponential Decay of Out-of-Time-Ordered Correlators[1] LEA SANTOS, Yeshiva University, USA, E. JONATHAN TORRES-HERRERA, Benemérita Universidad Autónoma de Puebla, Mexico — In studies of nonequilibrium quantum dynamics, several attempts have been made to connect the exponential decay rate of the Loschmidt echo and the survival probability with the classical Lyapunov exponent. The same idea has been recently extended to the out-of-time-ordered four-point correlator (OTOC). We show that the OTOC, just like the survival probability, may in fact show faster than exponential decays. This occurs not only for chaotic many-body quantum systems with level repulsion, but also for integrable models.

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