

# **High resolution movies of molecular rotational dynamics captured with ultrafast electron diffraction**

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## **Supplementary Material**

### **S1. Movies of rotational dynamics**

Movie 1 shows the evolution of the experimental MPDF (as defined in the main text) as a function of time. The time step between frames in the pump probe experiment is 100 fs, and the movie was created at 10 frames per second. Movie 2 shows the evolution of the theoretical MPDF over the same time scale.