

Title: Supplementary Movie 1

Description: 3D visualization of the superparticle as a result of fusing 306 experimental Nup107 PAINT particles.

Title: Supplementary Movie 2

Description: 3D visualization of the superparticle as a result of fusing 356 experimental Nup107 STORM particles.

Title: Supplementary Movie 3

Description: 3D visualization of the superparticle as a result of fusing 300 experimental Nup96 STORM particles together with its detected symmetry axis.

Title: Supplementary Movie 4

Description: 3D visualization of the superparticle as a result of fusing 400 experimental Tetrahedron DNA-origami nanostructures imaged using PAINT together with its detected symmetry axes. The white bars show the 3-fold symmetry axes of the tetrahedron.

Title: Supplementary Movie 5

Description: The effect of symmetry promotion on the superparticle of Nup107 PAINT data after Lie-algebra averaging step.