Displacement distributions for CE (Panel A) and POPC (Panel B) together with the fits of $P_{2d}$ and $P_{3d}$. For CE, $P_{3d}$ fits the data substantially better than the 2D description, while for POPC, $P_{2d}$ describes the data significantly better compared to the 3D realization. The time interval used in the analysis was 82 ns for both distributions (A,B).