

The following supplemental figures compare the observed and predicted mixing behaviors for all three types of simulated biomass particles investigated with the magnetic particle tracking method.

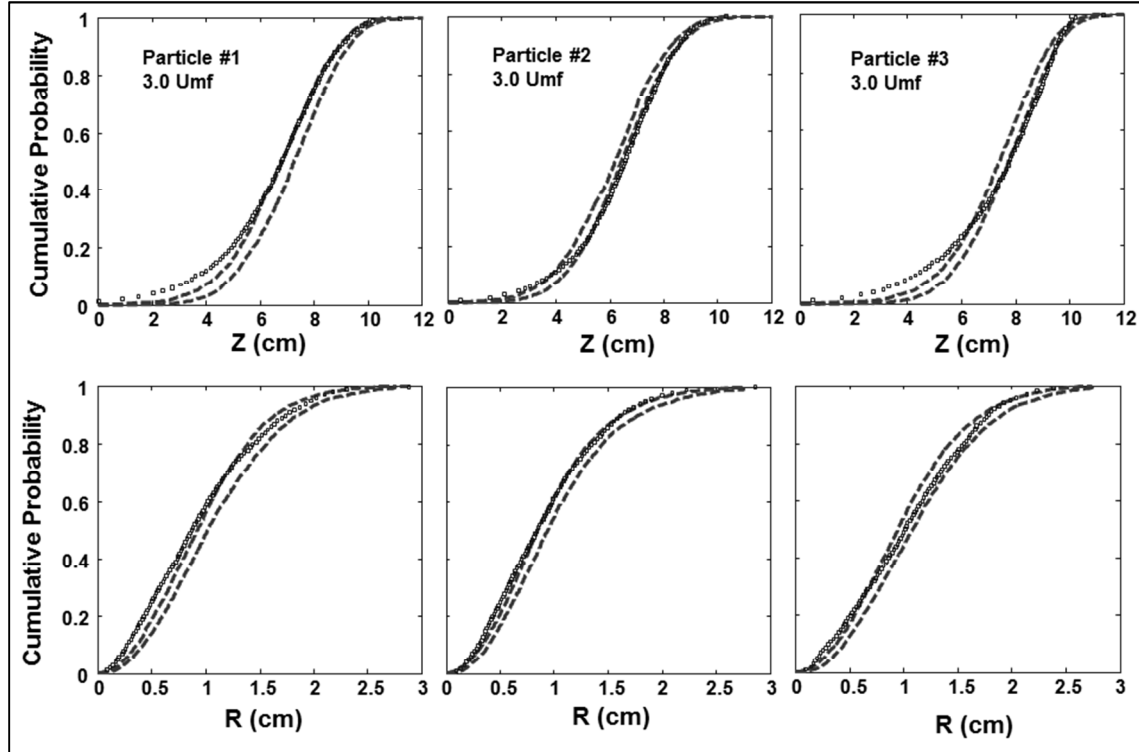


Figure S1. Comparison of time-average spatial distributions for particles #1-3 at 3.0 U_{mf} . Dashed lines are upper and lower limits for random walk simulations. Small squares are experimental.

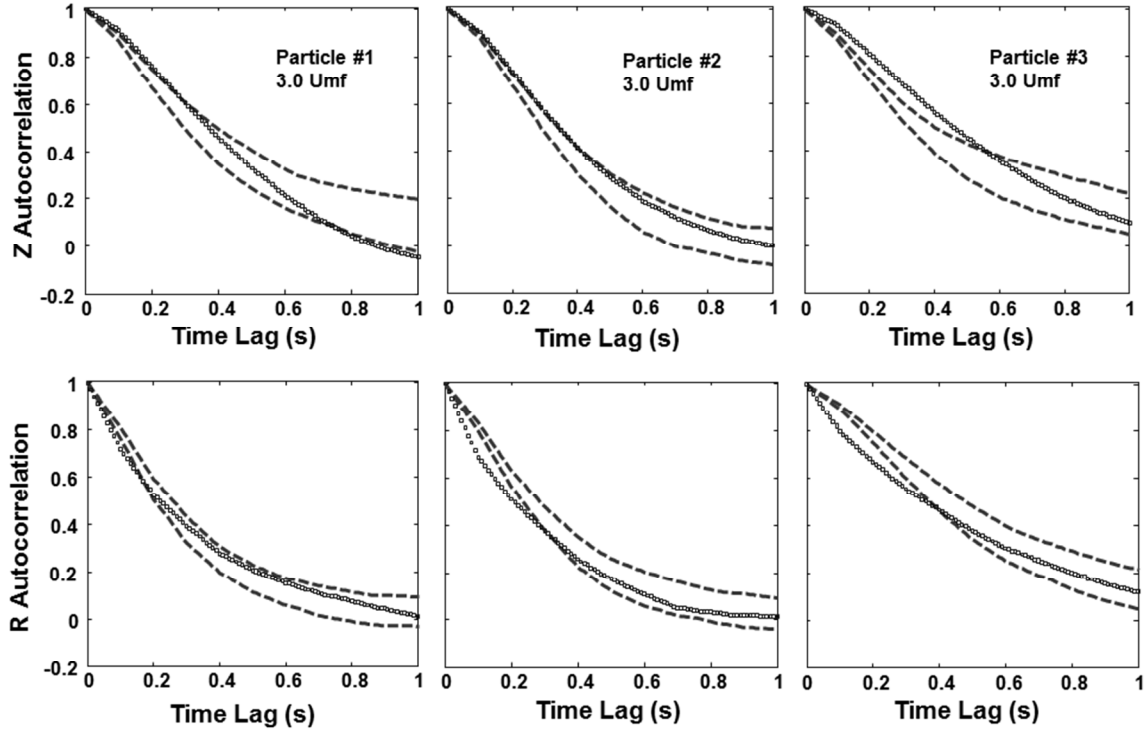


Figure S2. Comparison of autocorrelations in axial and radial locations for particles #1-3. Dashed lines are upper and lower limits for random walk simulations. Small squares are experimental.

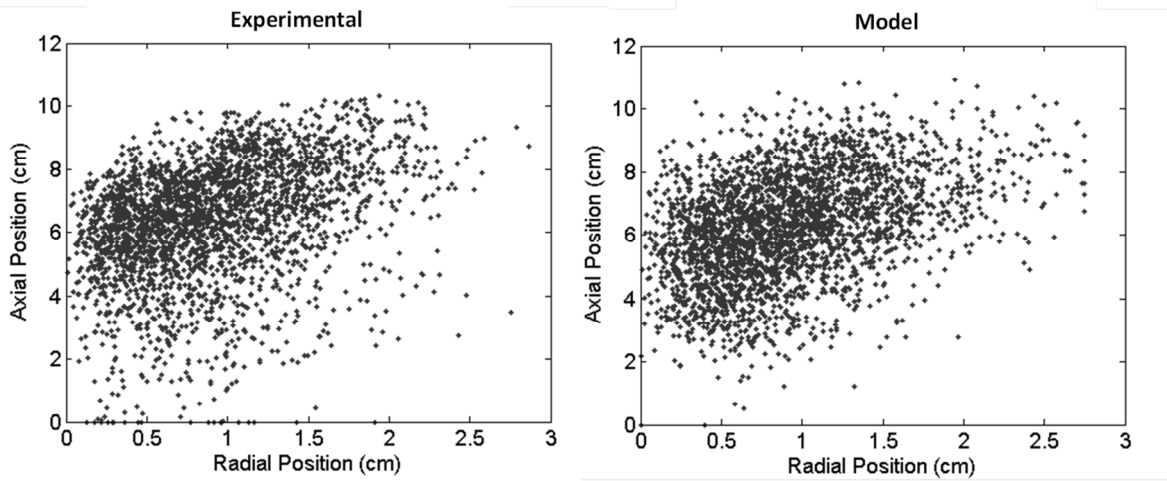


Figure S3. Comparison of the experimental #2 particle radial and axial locations at 0.1 s intervals versus those resulting from a single Monte Carlo realization of the random walk model at $3U_{mf}$.

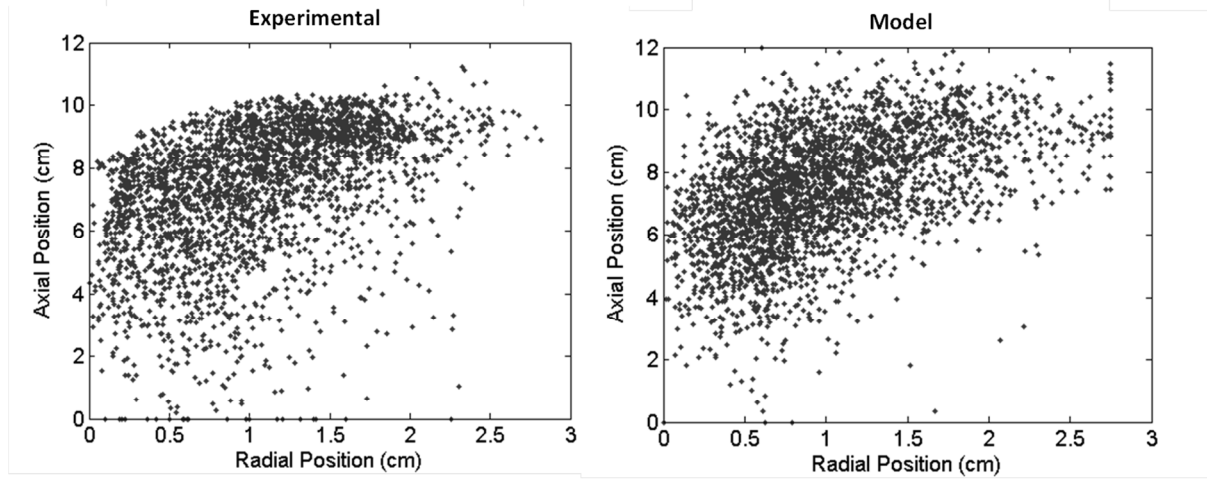


Figure S4. Comparison of the experimental #3 particle radial and axial locations at 0.1 s intervals versus those resulting from a single Monte Carlo realization of the random walk model at $3U_{mf}$.