

# STATISZTIKUS FIZIKAI SZEMINÁRIUMOK

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## **Aggregation-fragmentation dynamics in random flows: from tracers to inertial aggregates**

We investigate aggregation-fragmentation dynamics of tracers and inertial monomers (unit particles) in random flows. We use an individual-particle-based model, where each aggregate is characterized by a position, a velocity and a size. The dynamics consists of three steps: aggregates move advected by the fluid, they aggregate upon collisions and they fragment due to forces exerted by the flow field. We are interested in properties of the steady-state of this system, when aggregation and fragmentation dynamics balance each other. We compare the steady-state size distributions formed by tracers and by inertial aggregates. Finally, we analyze the scaling of the size distribution — with respect to the resistance of aggregates and the dilution of the suspension — for ensembles of monomers with different inertial properties.

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