Smoluchowski coagulation equation with a flux of dust particles

vendredi 23 mai 2025 09:00 (45 minutes)

We construct a time-dependent solution to the Smoluchowski coagulation equation with a constant flux of dust particles entering through the boundary at zero. The dust is instantaneously converted into particles and these solutions, that we call flux solutions, have linearly increasing mass. The construction is made for a general class of non-gelling coagulation kernels for which stationary solutions do exist. In the complementary regime, no flux solution is expected to exist. Flux solutions are expected to converge to a stationary solution in the large time limit. We show that this is indeed true in the particular case of the constant kernel with zero initial data. (Based on a joint work with Aleksis Vuoksenmaa - U. Helsinki)

Orateur: FERREIRA, Marina (IMT)