Seminarium Zakładu Zastosowań Matematyki
13.03.2019, godz. 10:15, s. 240

Agnieszka TANAŚ

Evolution of states of an infinite fission-death system

A microscopic fission-death model in the continuum is proposed and studied. In the model, point particles interact with each other and perform random actions: the death of the particle located at x which occurs independently with rate $m(x) \geqslant 0$ and under the influence (competition) of the other particles in a configuration, and an independent fission of the particle located at x into two particles (located at y_1 and y_2) with rate $b(x|y_1, y_2) \geqslant 0$.
The evolution of states of the system $\mu_0 \mapsto \mu_t$ is obtained by employing the correlation functions. We prove the existence and uniqueness of solutions of the evolution equation for the correlation functions that yields the evolution $k_0 \mapsto k_t$ on a finite time interval. Then we prove that each k_t is the correlation function of a unique state μ_t and continue k_t to all $t > 0$.