

Abstract: Consider the classical Newtonian 3-body problem, namely, bodies are mutually attracted by the Newton gravitation. Call motion oscillatory if as time tends to infinity \limsup of maximal distance among the bodies is infinite, while \liminf is finite. In the 50's Sitnikov presented the first rigorous example of oscillatory motions for the so-called restricted 3-body problem. Later in the 60's Alexeev extended this example to the full 3-body problem. A long-standing conjecture of Kolmogorov is that oscillatory motions have measure zero. We show that for the Sitnikov example and for the so-called restricted planar circular 3-body problem these motions often form a set of maximal possible Hausdorff dimension. This is a joint work with A. Gorodetski.