

This will be a survey of the investigations of the speaker and his students related to various unexpected properties of attractors proceeded during the last two decades. Thick attractors are attractors of positive, but not full measure. They occur for an open set of boundary preserving diffeos of a manifold with boundary. Unstable attractors are Milnor attractors that are not Lyapunov stable. They form a residual set in the Newhouse domain (I. Shilin). Milnor attractors appear to be topologically non-invariant (Bonatti, Minkov, Okunev, Shilin). So called "Gorodetski-Ilyashenko strategy" will be recalled. Other results will be reviewed, time permitting. Some open problems will be stated.