A probabilistic study of the processes which lead to q--distributions"

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Tsallis q--distribution can be obtained, in the time--average approach to statistical mechanics, if the number of times an orbit visit a given set of the phase-space is a random variable which follows a given law. We perform a study of this random process, showing that the corresponding orbits have some "unusual" properties (sticky properties, fractal dimension). The talk illustrates also the strict correspondence between the statistic of return times to a set and the statistic of the number of visit for the same set.