

# A nonlinear matter-field Hamiltonian analyzed with Renyi and Tsallis statistics

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We study the dynamics of a nonlinear matter-field system, using as tools an entropic and a statistical complexity measures. For the entropic we mean here Renyi and Tsallis measures and for statistical measure, the Jensen associated complexities. Our goal is to attain some clarity regarding features that could not be successfully tackled in previous similar work that employs

Boltzmann–Gibbs–Shannon and Tsallis measures. The new tools allow for a determination of statistical complexity maxima, no accessible in previous efforts. Other kind of results acquire rotund robustness in being encountered in three distinct statistical scenarios.