Anomalous distributions in intra-day time series using Generalized Statistical Physics

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It is already known that the return's distribution is something less Gaussian. As a possible form of that distributions it has been widely used the so called truncated Lèvy distributions [1] and less known but with good results [2] the so called q-exponentials (which maximize the Generalized Entropic Form proposed by C. Tsallis) characterized by an entropic index q. In this work one presents a study of the probability density distribution of returns for the intra-day data series of Lisbon stock market (PSI-20) which can be very well fitted by an overview, with two entropic indexes, of the power-law (q-exponentials) stated above.

[1] H.E. Stanley, R. Mantegna : Introduction to Econophysics
[2] C. Tsallis : J. Stat. Phys., **52** (1988) 479
[3] L. Borland : Phys. Rev. Lett., **89** (2001) 098701