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Dimensionally regularized Tsallis' statistical mechanics and two-body Newton's gravitation

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Abstract: Typical Tsallis' statistical mechanics' quantifiers like the partition function and the mean energy exhibit poles. We are speaking of the partition function Z and the mean energy $\langle U \rangle$. The poles appear for distinctive values of Tsallis' characteristic real parameter q , at a numerable set of rational numbers of the q -line. These poles are dealt with dimensional regularization resources. The physical effects of these poles on the specific heats are studied here for the two-body classical gravitation potential.

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