

A NEW KIND OF STATISTICALLY DEFORMED THERMODYNAMIC SYSTEMS

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ABSTRACT

The thermodynamics of tau-bosons is briefly presented. One proves that these systems are statistically deformed. The deformation outlined in this paper is radically different from the non-extensive Tsallis statistics, where the structure of the entropy is deformed via the q-logarithmic function.

REFERENCES

1. Tsallis, C. J., Stat. Phys. vol. 52, 1988, pag. 479
2. Lavagno, A., Narayana Swamy, P., arXiv: cond- mat/ 0111112 v1 7 Nov 2001
3. Badescu, V., Landsberg, P.T., J. Phys. A, vol. 35, 2002, pag. L591-L595
4. Badescu, V., Landsberg, P.T., Found. Phys. Lett., vol. 18, 2005, pag. 205-226
5. Kimball, M.O., Gasperini, F.M., Physica B, vol. 284, 2000, pag. 47
6. Pecharsky, V.K., Gschneidner, Jr. K.A., Fort, D., Phys. Rev. B vol. 47, 1993, pag. 5063
7. Wada, N., Kobayashi, T., Yano, H., Okuno, T., Yamaguchi, A., Awaga, K., J. Phys. Soc. of Japan, vol. 66, 1997, pag. 961
8. Murray, M., Rana, F., Haq, I., Cook, J., Chowdhry, B.Z., Snowden, M.J., J. Chem. Soc. Chem. Commun., 1994, pag. 1803
9. Landsberg, P.T., Eur. J. Phys., vol. 2, 1981, pag. 208-212
10. Landsberg, P.T., Einstein and statistical thermodynamics, Proc. Einstein Centennial Symposium on Fundamental Physics, Bogota, Columbia, July 30 - August 5, Eds: S M Moore, A M Rodriguez-Vargas, A Rueda, G Violini, 1979, pag. 73-117.