Information Entropy for Low-Temperature Fluctuations of a Myoglobin Molecule

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Activation process for unimolecular reaction has been considered by means of radiation theory. The formulae of information entropy of activation have been derived for the Boltzmann - Arrhenius model and the activation process model. The physical meaning of this entropy has been determined. It is a measure of conversion of thermal radiation energy to mechanical energy that moves atoms in a molecule during elementary activation act. It is also a measure of uncertainty of this energy conversion. The uncertainty is due to unevenness of distribution function representing the activation process. It has been shown that Arrhenius dependence is caused by the entropy change. Efficiency comparison of the two models under consideration for low temperature fluctuations of a myoglobin molecule structure shows that the activation process model should be favored over the Boltzmann – Arrhenius one [1].

1. Stepanov A.V., *Int. J. Mod. Phys. B* **29** (2015) 1550016 (18pages)
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