

Geothermal Model of Earth

by

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Abstract

This article discusses fundamental laws of thermodynamics and, particularly, the second law that introduces temperature and heat as interrelated to energy quantities. It addresses the problem of defining the temperature as a fundamental notion in physics. Temperature as a subjective measure of heat is examined closely. Based on the developed arguments, a new definition of temperature is proposed which would be based on the abstract notion of energy rather than statistically considered mechanical motion of particles. Based on this definition, one can develop a theory of temperature (heat) that can be applied to the interior of Earth. An empirical formula of distribution of temperature as a function of the radius of earth is suggested and discussed. The actual empirical coefficients that enter into this formula and define the model have to be calibrated based on actual measurements of temperature as a function of radius, or distance from the surface of Earth. A field study is proposed that can achieve this goal by monitoring the temperature in one of the deep wells that are known to exist throughout the country. (Some of these wells reach a few hundred foot or even a mile depth). Future possibility of this line of research is briefly outlines and the novelty of the given approach to the notion of temperature and heat is re-emphasized. This is not a conventional theory of heat, but has no contradictions with it. It deepens the notion of heat rather than changing it. Heat becomes a well-defined quantity instead of being intuitively understood and derivative concept in physics.