

## ***Interactive comment on “Thermodynamic origin of life” by K. Michaelian***

**Anonymous Referee #2**

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Thermodynamic origin of life by K. M.

This paper is a bit too much theoretical, giving not many and strong links with experimental evidences. First, I would like to invite the Author to reassume the main concepts and shorten the paper. In this, I suggest to underline deeply the Thermodynamic point of view and the Principles that rule the evolution of life proposed here. This could help to avoid the vision of “Nature” as a transcendental subject/object, idea that can be seen in this paper. There are not enough experimental evidences for RNA molecule giving origin to life processes; in order to validate the theory that RNA/DNA molecules could catch sunlight and give enough heat in order to favour life origin, I suggest to calculate or cite the amount of needed RNA molecules to cover shallow waters. Amount is important and effective. I recommend to cite some other reference in order to give a complete view of the problem. Please have a look of [Pulselli R.M. et al., 2009. *BioSystems*, 96, p. 237. Wicken J.S., 1978. *J. Theor. Biol.*, 72, p. 191] about thermodynamics

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of life origin; [Biondi et al., 2007. *BMC Evolutionary Biology* 2007, 7(Suppl 2)] on RNA and rocks interplay in a prebiotic world. I propose to change the title in something addressing it as an essay, since it will be a great one.

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Interactive comment on Earth Syst. Dynam. Discuss., 1, 1, 2010.