

Review of: "Dark Energy as an intrinsic property of Matter"

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Potential competing interests: No potential competing interests to declare.

In the article 'Dark Energy as an intrinsic property of Matter', the author Dr. Richard Bowen, has described a different line of thought to understand matter and volume expansion of space. In his Space Production Model (SPM), the author has believed that both matter and dark energy are two manifestations of the same entity. Then he has realized this phenomenological matter model by considering the fluid analogy of a scalar field with an equation of state in 'virial equilibrium'. Further he has given a discussion of the SPM model in the context of inhomogeneous cosmology.

The author has shown his calculations elaborately and written the manuscript clearly. To encourage new approaches to understand our Universe, I would recommend this manuscript on Qeios. But I believe the authors should address the following points in his modified manuscript.

1) Has the author first introduced the SPM model? If there is any previous work based on the SPM or similar approach, the author should cite those in the manuscript.

2) The author has stated 'the resulting expansion law falls short of matching observational cornerstones (it does fit with the energy content, but not with the model-dependent age of the Universe)'. But to establish a new approach it is essential to study whether the model is compatible with current day observations. So, I suggest checking the viability of the SPM model in the context of present cosmological data. It will be significant, if he can show the constraints on the Hubble parameter, energy content and equation of state by considering the SPM model in the context of observational data.