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The Universe - an Open System

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Abstract

The article „Equivalence of Energy and Time" allows a contribution to the decision of whether the universe is an open or closed system.

Keywords: universe, open system, closed system, energy, time

Introduction

The question of whether the universe is an open or a closed system has not yet been finally clarified. The appearance of the publication „Equivalence of Energy and Time" [1] allows a new approach to this question to add another argument for an open system.

As the age (time) of the universe continues to advance, energy must also increase, in accordance with the publication „Equivalence of Energy and Time".
The formula for the Equivalence is:

$$E = (h/t_p^2) \cdot t$$

E = Energy, h = PLANCK quantum action
t_p = PLANCK time
t = time

Conclusion

This means that the universe is an open system.

Reference

[1] Jöge, F.M.: Equivalence of Energy and Time, International Journal of Physics and Astronomy, June 2022, Vol.10, No.1 pp.1-2