

Title: An alternative solution for the Milne Model.

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Abstract: The Milne model, a special-relativistic cosmological model, is mathematically equivalent to a particular case of the Robertson-Walker (RW) model with negative spatial curvature in the limit of vanishing energy density. Solving the Friedmann equations allows for the linear time-dependent scale factor. As a specific instance of the RW model, the Milne model adheres to the cosmological principle, ensuring that the three-dimensional space remains isotropic and homogeneous throughout. From this condition, one can derive the cosmological redshift relation. Interestingly, our findings demonstrate that this principle holds even under the assumption that the speed of light varies at cosmological scales. This result is in agreement with recent findings reported in [1-3].

References

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