

Abstract Submitted
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‘Un-Darkening the Cosmos: New laws of physics for an expanding universe WILLIAM GEORGE, Imperial College of London — Dark matter is believed to exist because Newtons Laws are inconsistent with the visible matter in galaxies. Dark energy is necessary to explain the universe expansion. George, W.K. (2016) Could time be logarithmic?, J Cosmology, 26, 6 14118-14132 (also available from www.turbulence-online.com)) suggested that the equations themselves might be in error because they implicitly assume that time is measured in linear increments. This presentation couples the possible non-linearity of time with an expanding universe. Maxwells equations for an expanding universe with constant speed of light are shown to be invariant only if time itself is non-linear. Both linear and exponential expansion rates are considered. A linearly expanding universe corresponds to logarithmic time, while exponential expansion corresponds to exponentially varying time. Revised Newtons laws using either leads to different definitions of mass and kinetic energy, both of which appear time-dependent if expressed in linear time. And provide the possibility of explaining the astronomical observations without either dark matter or dark energy. We would have never noticed the differences on earth, since the leading term in both expansions is linear in δ/t_o where t_o is the current age.

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