

Abstract Submitted
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The darkness of mere being: DM and DE explained JAMES BEICHLER, Retired — In previous APS meetings, I have presented a geometrical explanation of Dark Matter and Dark Energy that makes testable predictions and is thus completely falsifiable. The theory is based on a macroscopically extended fourth dimension of space that yields a five-dimensional space-time structure. In this structure, the four-dimensional space-time of relativity is extrinsically curved in the higher spatial dimension. Dark Matter is curvature in the higher dimension that is not directly associated with local matter, but instead results from an interaction between local matter or curvature and the global curvature due to all matter in the universe. Criticisms that the theory was not mathematical have now been overcome and a simple algebraic formula that corresponds to the geometry of the four-dimensional structure of space has been derived. The algebraic formula appears to be Newtonian, but it implies a five-dimensional unified field structure such as that developed by Kaluza in 1921 and extended by Einstein and his colleagues in the late 1930s. The new equation also shows how gravity can be quantized on the basis of relativity without hypothesizing the discrete nature of matter, i.e., the existence of specific “particles” of gravity, inherent in quantum mechanics, the Standard Model and other quantum models.

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