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Dark Physics: Resurfacing the universe JAMES BEICHLER, Semiretired — In the past few decades two new "crises" for fundamental physics have emerged by the observation and confirmation of Dark Matter (DM) and Dark Energy (DE). These are not problems which can be solved by quantum theory, but rather problems that are related to gravity theory as expressed by curved space-time as expressed in the general theory of relativity. Numerous ideas and hypotheses have been suggested to explain these problems, but no particular hypothesis or resulting model has proven satisfactory - no model yet proposed seems to be able to explain both DM and DE even though many physicists agree that the two should have a single common explanation, implying that the physics of DM and DE lies outside of the present paradigms and interpretations of physical reality. However, one new model has been developed that can simply explain both DM and DE. This model includes a fundamental change in Newtonian gravity theory that expands three-dimensional space to four dimensions and thus forces the acceptance of an extrinsically curved four dimensional space-time. The extra term added to Newton's gravity can then be equated to the Lambda-CDM that has been added to the Einstein equation. Accepting this new model would mean accepting the existence of a macroscopically extended fourth space-like dimension, which changes all of physics to some degree.

> James Beichler Semi-retired

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