

What is dark energy, why are there repulsive effects?

Effects associated with dark energy are effects of the presence of negative energy in the vacuum of space. Technically dark energy has been a place holder term in the current standard Lambda-CDM model for a form of energy that was not understood. It was supposed to be a positive form of energy that acts like negative energy. The model is fundamentally wrong, technically 'dark energy' does not exist. The repulsive gravitational force between positive and negative mass-energy already follows from Newton's law of universal gravitation where the attractive gravitational force reverses when one of the two masses considered is negative.

How does this form of energy increase?

Negative energy in space increases along with corresponding positive energy as mass aggregation in the universe progresses due to gravity.

Why does the universe expand in the first place?

Due to the repulsive effects between positive and negative energy. These energies emerged in corresponding amounts in a 'not quite so big' bang. There was gravitational repulsion from the beginning and there never was an initial singularity. There is no reason for the universe to ever re-collapse.

How did our universe of matter and energy emerge from 'nothing'?

It emerged from zero matter and energy in a 'not quite so' big bang along with corresponding negative energy in space. This process observes universal conservation of energy with a conserved value of zero. The early process is fundamentally akin to what we observe as gravity in today's universe. This directly suggests a new approach for fundamental energy concepts in quantum/particle physics and may inspire foundational concepts such as string theory. Expect interesting times ahead.

Where does the energy in gravitational acceleration come from?

The energy is generated at the expense of negative energy in space. There is no positive energy source, neither in the gravitational field nor in 'gravitational potential energy', which I have proved is not a physical form of energy. Fundamentally, in movement down a gravitational field negative energy in space increases, in upwards movement it decreases. Think about it next time you walk up or down the stairs. Physicists should note that fundamental energy is not reflected in the way general relativity currently models energy.

What does this mean for research in cosmology?

A revolutionary new beginning. Shockingly, the mathematical model on which cosmology has been based for generations (Friedmann equations) is invalid. It invalidates a dominant swath of cosmological research from the past. Prominent concepts and questions in cosmology such as whether the universe is open or closed have been based on this model. These familiar concepts lose validity or their current meaning. The precision suggested in the determination of parameters such of the age of the universe has been unreal. Methodology is affected. The legacy model favored top-down speculative approaches where the new Dual-Energy Cosmology can provide answers from the bottom-up application of the

physical principles that govern the evolution of our universe. Further advances in theory and improved observation of the early universe at high redshift are crucial for cosmology moving forward.