Dark energy may not actually exist, scientists claim

Dark energy - the mysterious substance thought to make up three-quarters of the universe - may not actually exist, claims new research.

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The concept of dark energy was created by cosmologists to fit Albert Einstein's General Theory of Relativity into reality after modern space telescopes discovered that the Universe was not behaving as it should.

According to Einstein's work, the speed at which the Universe is expanding following the Big Bang should be slower than it actually is and this unexplained anomaly threatened to turn the whole theory upside down. In order to reconcile this problem the concept of dark energy was invented.

But now Blake Temple and Joel Smoller, mathematicians at the University of California and the University of Michigan, believe they have come up with a whole new set of calculations that allow for all the sums to add up without the need for this controversial substance.

The research could change the way astronomers view the composition of our Universe.

The Standard Model of Cosmology, which describes the evolution of the Universe, begins with the Big Bang. Astronomers have recently observed that the galaxies are accelerating as they move away from each other, and cosmologists have sought to explain this unexpected acceleration by introducing the concept of dark energy, which permeates space, propels matter, and accounts for nearly 75 percent of the mass-energy in our Universe.

The new research, published in the Proceedings of the National Academy of Science, is likely to be equally controversial as the work it purports to challenge especially as it relies on our galaxy being at the centre of the Universe - a concept that has been generally disregarded in modern science.

Dr Malcom Fairbairn, particle cosmologist at King's College London, said: "Ever since the concept of dark energy was first mentioned people have been trying to explain it or explain it away. It is a mystery and an inconvenience."

"This is one attempt at it. Whether it is right only time will tell."

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