XIII Mexican School of Particles and Fields



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Does dark energy signal a wrong physics?

Abstract content

Recent observations indicate that the Universe is now in a phase of accelerated expansion, the physical cause of which has become one of the most profound mysteries of science. In the framework of the relativistic theories of gravitation, this requires the inclusion of a term with the characteristics of repulsive gravity, dubbed as dark energy', which accounts for about 75 per cent of the total energy density in the Universe. However, the mysteriousdark energy' poses a serious confrontation between fundamental physics and cosmology. Recently it has been discovered (by the author) that the present crisis appears due to an error in the formulations of the perfect fluid which is used to model the matter contents (including dark energy) in the Universe. It should be noted that this aspect of the theories of gravitation has remained untested. An experiment, to test this feature, has been proposed.

Summary

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