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Accelerating Universe, Dark Energy and Modified Gravity

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One of the great mysteries of modern cosmology is the origin and nature of dark energy - a smooth component that contributes about 70% of the total energy density in the universe and causes its accelerated expansion. While measurements of expansion history of the universe are steadily improving thanks to a variety of cosmological measurements, theoretical understanding of what powers the accelerating universe is very poor. In this talk I review some recent attempts to explain the source of the accelerating universe, and examine critically the prospects to distinguish between modifications of general relativity and dark energy explanations for the present-day accelerated expansion.