



COLLOQUE DE PHYSIQUE

Lundi 8 mai 2023, 12h30

École de Physique, Auditoire Stueckelberg

« Is Dark Energy Unknowable? »

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The development of modern cosmology is a remarkable story in modern physics. From an esoteric backwater, an offshoot of general relativity and a niche topic in astronomy, cosmology has become a powerhouse of fundamental physics, leading to precision constraints on a range of properties of the Universe. It has also led to surprises, the most notable of which is the fact that the Universe is expanding at an accelerating rate, possibly driven by an exotic form of dark energy, which makes up 2/3 of the energy budget of the Universe, or a new exotic fifth force which competes with gravity on large scales. The next decade of observational cosmology is targeting these exotica with the hope that we may know what this new sector of the Universe actually is. Yet there is a real possibility that we may be at the limit of our abilities, either observationally or theoretically, and that, unless we find a new approach, or something unexpected happens, we may never know what the majority of the Universe is made of.