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Observational consequences of an interacting multiverse

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The paradigm of an interacting multiverse opens the door to a new wide variety of cosmic phenomena to be explored. In this talk, we shall show that the interactions among the universes of the multiverse may change the global properties of the universes without violating their notion of causal closure (in the local sense). These changes would eventually have observational consequences on the properties of the universes, some of which turn out to be distinguishable and distinctive of the multiverse. Thus, the interacting multiverse turns out to be testable, a feature that was probably untenable not so many years ago. We shall also analyse different processes that can be given in the interacting multiverse like the creation of the universes in entangled pairs, the appearance of a landscape-like structure of vacuum states, or the effective modification of the value of the field potential, among others.

Summary

The paradigm of an interacting multiverse opens the door to a new wide variety of cosmic phenomena to be explored. In this talk, we shall show that the interactions among the universes of the multiverse may change the global properties of the universes without violating their notion of causal closure (in the local sense). These changes would eventually have observational consequences on the properties of the universes, some of which turn out to be distinguishable and distinctive of the multiverse. Thus, the interacting multiverse turns out to be testable, a feature that was probably untenable not so many years ago. We shall also analyse different processes that can be given in the interacting multiverse like the creation of the universes in entangled pairs, the appearance of a landscape-like structure of vacuum states, or the effective modification of the value of the field potential, among others.

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