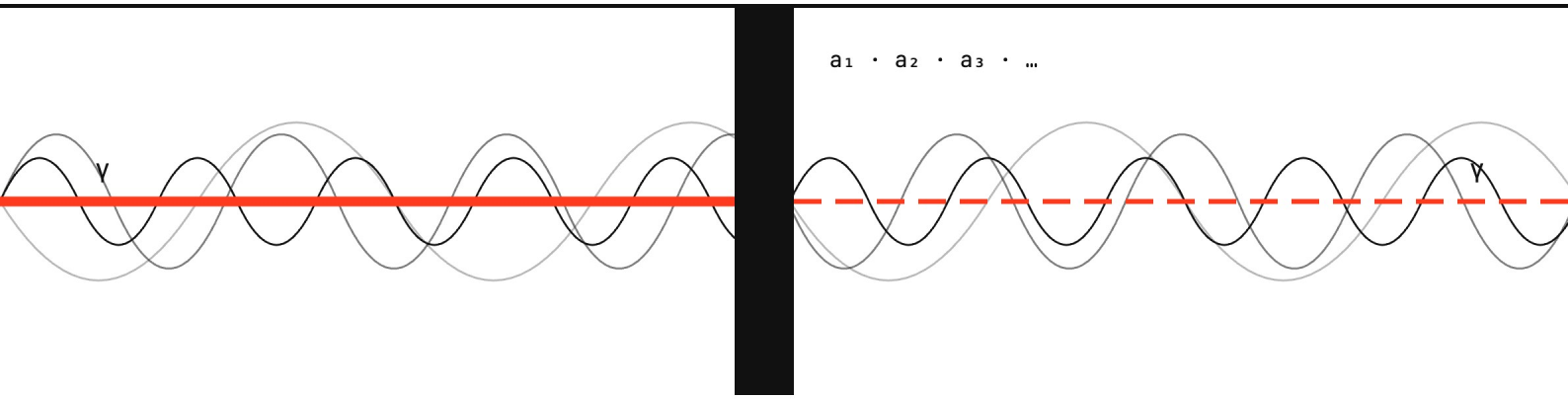


THE HUNT FOR MULTIPLE AXIONS

SPEAKER

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ABSTRACT

Axions and axion-like particles may arise in Nature as a spectrum rather than as a single field. Such a scenario naturally emerges in string-inspired constructions, as well as in reasonably simple bottom-up extensions of single axion models. In such multi-axion scenarios, new signal features arise, and recasting of existing experimental bounds from single-axion constraints becomes generally non-trivial. This motivates a closer look at how laboratory axion searches are impacted when multiple states contribute.

In this talk, I will first briefly review the current hunt for axions. I will then introduce bulk axions in extra dimensions as a concrete framework that naturally generates multiple modes, and highlight some of the phenomenological subtleties that follow. Finally, I will present general results for multi-axions–photon oscillations, showing how coherence and interference can either enhance or suppress signals, with direct implications for light-shining-through-a-wall experiments and beyond.

WEDNESDAY
11.11.26

TIME
12:30

VENUE
AULA GALILEI

Organizers: G. D'Amico, M. Pietroni