The inflationary paradigm, already in its simplest disguises, has been spectacularly successful when it comes to agreement with observations. However, there's a lot we do not yet know about inflation:
- what is its energy scale?
- how about its particle content?
The answers to these questions are bound transform our understanding of how cosmology stems from fundamental physics. A high-scale inflation, for example, would automatically be a portal to otherwise unaccessible energy scales!
In this talk I will review some recent work on the inflationary particle content. I will show how current and upcoming experiments can probe the mass, the spin and, crucially, the coupling of the inflationary particle zoo. I will then provide a few examples of theoretically compelling models delivering very distinct observational features, including chiral gravitational waves testable at CMB and interferometers scales. In closing, I will elaborate on an EFT approach that allows to consistently embed spinning fields (those generating the most interesting phenomenology) in the inflationary Lagrangian.