Progress on Old and New Themes in cosmology (PONT) 2017



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I will present a minimal extension of the Standard Model that addresses dark matter, the strong CP problem, the smallness of neutrino masses, baryogenesis and primordial inflation. The model contains a new U(1) symmetry and a single new physics scale of the order of 10^11 GeV. Dark matter is made of axions, whose mass in predicted to be in a narrow range, which will be probed in the near future. Remarkably, inflation does not suffer from unitarity issues, unlike in other minimal proposals, and reheating can be computed in detail since all the particle content up to the Planck scale is assumed to be known. This allows to draw sharp predictions for the CMB properties.

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