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The Scale Invariant Vacuum Paradigm: Main Results and the Current BBNS Progress

The talk will present a summery of the main results within the Scale Invariant Vacuum (SIV) paradigm as related to the Weyl Integrable Geometry (WIG) as an extension to the standard Einstein General Relativity (EGR). After a short sketch of the mathematical framework, the main results until 2023 [1] will be highlighted in relation to: the inflation within the SIV [2], the growth of the density fluctuations [3], the application of the SIV to scale-invariant dynamics of galaxies, MOND, dark matter, and the dwarf spheroidals [4], as well as MOND as a peculiar case of the SIV theory [5], along with the most recent results on the BBNS light-elements' abundances within the SIV [6].

Keywords: cosmology: theory, dark matter, dark energy, inflation, BBNS; galaxies: formation, rotation; Weyl integrable geometry; Dirac co-calculus.

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