Bridging high and low energies in search of quantum gravity - 2025 Cost Action CA23130 First Annual Conference

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Probing quantum gravity at all scales

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To develop observational tests of quantum gravity, we require lever arms that translate Planck-scale predictions into predictions at observationally accessible scales. In my talk, I will use asymptotically safe quantum gravity as a case study. I will show, how the interplay of quantum gravity with matter (both visible and "dark") shapes the properties of matter fields in and beyond the Standard Model at the Planck scale. I will then show how to translate these Planck-scale predictions into predictions of Standard-Model properties as well as predictions about the properties of the dark matter and the dark energy using the Renormalization Group flow as a lever arm.

Working Group

WG1 - High Energy QG Theory

Author: EICHHORN, Astrid (University of Heidelberg)Presenter: EICHHORN, Astrid (University of Heidelberg)Session Classification: WG1 High Energy QG Theory 1