

Agegraphic Dark Energy with GUP

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Abstract : Dark Energy origin is unknown and so describing this mysterious component in large scale structure needs to manipulate our theories in general relativity. Although in most models, dark energy arises from extra terms through modifying Einstein-Hilbert action, maybe its origin traces back to fundamental aspects of ground energy of space-time given in quantum mechanics. Hence, diluting space-time in general relativity with quantum mechanics properties leads to the Karolyhazy relation corresponding energy density of quantum fluctuations of space-time. Through generalized uncertainty principle and an eye to Karolyhazy approach in this study we extend energy density of quantum fluctuations of space-time. Also, the application of this idea is considered in late time evolution and we have shown how extra term in generalized uncertainty principle plays as a plausible interaction term role in suggested model.

Keywords : generalized uncertainty principle, karolyhazy approach, agegraphic dark energy, cosmology

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