

Abstract Submitted
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New Perspective on the Cosmological Constant Problem VESSELIN GUEORGUIEV — A multiverse approach to the Cosmological Constant Problem (CCP) is considered. It is assumed that each member of the multiverse ensemble has a characteristic scale a that can be used as integration variable in the partition function. An averaged characteristic scale of the ensemble is estimated by using only members that satisfy the Einstein field equations. The averaged characteristic scale is compatible with the Planck length when considering an ensemble of solutions to the Einstein field equations with effective cosmological constant near the quantum field theory value (of the order of the Planck vacuum energy density $\tilde{\Lambda} \approx 8\pi$ in Planck units). For universes with characteristic scale of the order of the observed universe $a \approx 8 \times 10^{60}$ the cosmological constant $\Lambda = \tilde{\Lambda}/a^2$ is within few orders of magnitude of the observed value.

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