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## Cosmological constant problem on the horizon

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We revisit the quantum cosmological constant problem and highlight the important roles played by the dS horizon of zero-point energy. We argue that fields which are light enough to have dS horizons of zero-point energy comparable to the FLRW Hubble radius are the main contributors to dark energy. On the other hand, the zero-point energy of heavy fields develop strong nonlinearities on sub-Hubble scales and can not contribute to dark energy. We speculate how this proposal can solve the old and new cosmological constant problems. We further speculate if the zero-point energy of heavy fields can provide the seeds of dark matter.

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