Interpretation and solution of the cosmological constant problem.

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Abstract :
The cosmological constant problem or vacuum catastrophe has long been a mystery of physics. We bring a solution and a simple interpretation.

It is sufficient to calculate the dark energy density parameter ΩΛ at Planck time, origin of our universe :

$$\Omega_{\Lambda},t_p = 1/3\ \Lambda\ c^2\ t_p^2$$

with $t_H = 1/H$,

where t_H is Hubble time and H is Hubble constant

The vacuum catastrophe = $\Lambda / l_p^{-2} = \Lambda\ l_p^2$

as

$$l_p = c\ t_p$$

$$l_p^2 = c^2\ t_p^2$$

The vacuum catastrophe = $\Lambda\ c^2\ t_p^2$

The vacuum catastrophe = $3\ \Omega_{\Lambda},t_p$

Conclusion

The vacuum catastrophe would be the energy density parameter of cosmological constant at Planck time in the ΛCDM model with a factor of 3 (and with a divisor of 8 pi if we express the problem in J/m^3) , and it would no longer be a problem.