

The quantum nature of gravity seen in cosmological observations

In the author's model of low-energy quantum gravity, the cosmological redshift, additional darkening of distant objects and a diffuse cosmic optical background, presumably detected by the New Horizons mission, can be interpreted, without cosmological expansion and dark energy, as a result of the scattering of photons on superstrongly interacting background gravitons. The constancy of the ratio $H(z)/(1+z)$ in this model is consistent with observations of the Hubble parameter $H(z)$. There is a possibility of interpreting dark matter as a gas of virtual massive gravitons.

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