

# **Dynamic Gravitational Red-Shift Experienced by Intergalactic-Photons Possibly-Observed as the ‘Cosmological Red-Shift’**

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## **Abstract:**

Photon is a chunk of energy  $hf$  where  $h$  is Planck’s constant, and  $f$  the frequency. Every chunk of energy has to produce a gravitational field around it. The ‘particle’ photon travels in the manner of ‘quantum jumps’; whereas the field travels in the manner of ‘waves’. Therefore, when the photon jumps to a new position from ‘a’ to ‘b’ at a distance, say equal to its ‘wavelength’, the gravitational-field produced by its previous position ‘a’ is present there; so the ‘photon’ experiences the ‘gravitational red-shift’. By this time the gravitational-field around the position ‘a’ collapses and new field at the position ‘b’ gets established; so when the photon jumps to a new position ‘c’, it has to ‘climb’ the gravitational potential-well produced at ‘b’; and so it again experiences the gravitational red-shift. This process continues for every jump of the photon, reducing its frequency at every step. It is proposed here that the ‘cosmological red-shift’, first observed by Edwin Hubble, is possibly caused by this mechanism, termed here as ‘dynamic gravitational red-shift’.