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## Expansion Lensing – A new luminosity-angular distances relation derived from Friedmann-Lemaître-Robertson-Walker metric

In this talk I will show how the Expansion Lensing relationship  $d_L = d_A(1+z)$  is derived from the Friedmann-Lemaître-Robertson-Walker (FLRW) metric. The expression also follows from the fact that the angular distance of a galaxy ( $d_A = S/\theta$ ), i.e. the distance at emission, is defined identically for both static and expanding universes, and hence both images subtend the same angle  $\theta$ . Therefore, there is no flux dispersion on expanding universe with respect to the static one, but only flux dilution due to time dilation for path elongation and wavelength redshift. Both effects are comprised in an unique  $(1+z)$  factor. The talk is completed showing empirical evidences of the new relation and comprehensible view of the Hubble tension.

References:

<https://arxiv.org/abs/2003.05307>

<https://arxiv.org/abs/2003.06139>

<https://arxiv.org/abs/2203.01417>

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