

“Neutrino Redshifts as Definitive Experimental Test of Doppler/Expansion Redshifts vs Photon Redshifts Due to Interaction with Matter”
by C. F. Gallo

Neutrinos will undergo Redshifts due to Doppler and/or Space Expansion effects similar to Electromagnetic Radiation (Photons). However, in some situations (ex., Quasars, etc), Photon Redshifts may be PARTIALLY due to cumulative energy-loss mechanisms with the intervening medium. In this situation, the corresponding Neutrino Redshifts will be much smaller since the interaction cross-section for neutrino-medium interactions will be much smaller than any photon-medium cross-section. Thus, observation and comparison of photon redshifts vs corresponding neutrino redshifts will be very informative. If the photon and neutrino redshifts are similar, then a Doppler and/or Space Expansion interpretation is justified. If the neutrino redshift is much smaller than any corresponding photon redshift, then an interpretation via a cumulative energy-loss mechanism is justified. This is a very definitive experimental test of redshift interpretations. Since Neutrino measurements are being made now on the integrated emission of all Quasars (including neutrino redshifts), definitive experimental results may be available shortly.

Reference: “Redshifts of Cosmological Neutrinos as Definitive Experimental Test of Doppler versus Non-Doppler Redshifts” by C. F. Gallo in IEEE Trans. Plasma Science, vol. 31, No. 6, pgs. 1230-1231, Dec. 2003.

XX

“Crisis in Cosmology Conference”.
Moncao, Portugal
June 23-25, 2005.
www.Cosmology.info

XX

Additional References.

“Thermodynamic Laws of Neutrino and Photon Emission”.
by Walsh and Gallo.
Am J Phys,
vol 48, #8, pgs 599-603, Aug 1980.

“A New Red Shift Mechanism with Possible Applications in Astrophysical Problems Such as Quasars”.
by C F Gallo.
Int. J. Theor. Phys,
vol 13, pgs 417-418, 1975.

(1) REDSHIFTS: PHOTONS vs NEUTRINOS.

**ElectroWeak Similarities:
Neutrinos and Photons.**

Quantized “Wave-Energy” Particles.

Energy \propto Frequency.

Zero (small) Rest Mass.

Travel at Speed of Light?

**DOPPLER/EXPANSION:
Photons and Neutrinos
Yield SIMILAR Redshifts.**

**REDSHIFTS via INTERACTION with MATTER
(NON-Doppler/Expansion):**

Photon-Matter Interaction - LARGE EFFECT.

Raman & Raman-Related Redshifts.

Pseudo-Raman Redshifts (CREIL).

Compton & Related Redshifts.

Plasma Redshifts.

WOLF Red/Blue Shift.

Neutrino-Matter Interaction - small effect.

Photons and Neutrinos

VERY DIFFERENT Redshifts.

CONCLUSION:

Photon vs Neutrino Redshifts

yield Definitive

Experimental Differentiation

re Doppler/Expansion Redshifts vs

Matter-Interaction Redshifts !!!

(2) POSSIBLE DEFINITIVE NEUTRINO REDSHIFT OBSERVATIONS.

****QUASARS****

***Supernova**

Big Bang Remnant Radiation

Solar Center-to-Limb Redshift

Overall Hubble Galactic Redshift

(3) QUASARS.

OBSERVATIONS.

Quasars (Large Z) Seem Associated with Galaxies (small z).

Quasars (Large Z) in Gassy “H-alpha Forest” Environments (small z).

PROPOSALS/CONCLUSIONS.

**Photon-Matter Interaction
PARTIALLY Causes Large Quasar Redshifts.**

**Quasars are at Closer Distances
Corresponding to Associated
“Hubble” Galaxies.**

**Quasars are at Closer Distances
Corresponding to “Hydrogen Forest”.**

Quasars are NOT Extraordinarily Bright.

**All Consistent with Extensive Published
Astronomical Observations.**

**Additional Partial Redshift Mechanism Due
to Raman-related Mechanism.**

(4) PARTIAL QUASAR REDSHIFT MECHANISM (Proposal).

Observational Facts.

- (1) Large Hydrogen
Lyman-Alpha Absorption.**
- (2) "Forest-of-Lines".**

Interpretations.

- (1) Lots of Atomic Hydrogen and
Related Molecular Species.**
- (2) "Forest-of-Lines" is Due to Lots of
Hydrogen Related Molecular
Species.**

Speculation.

**Additional Partial Quasar Redshift is
Due Raman-Related Redshift
Mechanism.**

Experimental Tests.

- (1) Measure Neutrino vs Photon
Redshifts.**
- (2) If Raman-type Redshift, then
Very Low Energy Photons
(ex, H:21cm) can NOT Excite
Raman Levels and will NOT be
Redshifted as much as High
Energy Visible/UV Photons.**

(5) QUASARS: NEUTRINO MEASUREMENTS.

Neutrino Spectrometers can NOT measure Individual Quasar Neutrino Redshifts.

Neutrino Spectrometers ARE Measuring Integrated Quasar Neutrino Radiation (Including Redshifts) NOW!!!

Could be Definitive Experiment due to Big Difference in Neutrino Energy Distribution and Intensity, for the Two Competing Quasar Models !!!

(1) Quasars at Great Distances and Extremely Bright.

OR

(2) Quasars at Normal Hubble Galaxy Distances and NOT Extraordinarily Bright.

**(6) Other Interesting Aspects of
Neutrino Redshifts.**

Rest Mass (Photons and Neutrinos) ????

Doppler Effect:

**Interesting Technique for Detecting
Possible Differences in Rest Mass.**

Travel at Speed of Light??

**Interesting Technique for Detecting
Possible Differences in Rest Mass.**

**(7) Neutrino Spectrometers ARE
Measuring Integrated Quasar Neutrino
Redshifts NOW !!!**

**Could be DEFINITIVE Experiment
due to Big Difference in Neutrino
Energy Distribution
and Intensity
for the Two Competing
Quasar Models !!!**

**(1) Quasars at Great Distances and
Extremely Bright.**

OR

**(2) Quasars at Normal Hubble
Galaxy Distances and NOT
Extraordinarily Bright.**