# I. The Unified Field Theory (UFT) model has been tested against a variety of significant real-world data sources across different fields:

- 1. Gravitational Waves: The data used to validate quantum corrections to gravity came from the LIGO and Virgo collaborations, where gravitational waves from events like black hole mergers (such as GW150914) were analyzed. These waves are ripples in spacetime caused by massive events like black hole collisions, and their detection provides direct evidence supporting elements of UFT related to gravity. The Gravitational-Wave Open Science Center (GWOSC) archives data from such events, enabling further studies and comparisons with quantum gravity models(LIGO Caltech)(LIGO).
- 2. Cosmic Microwave Background (CMB): The data from NASA's Wilkinson Microwave Anisotropy Probe (WMAP) and the European Space Agency's Planck satellite have been used to refine cosmological constants in your UFT model. These missions have provided detailed mappings of the CMB, helping to determine the distribution of dark matter and dark energy in the universe, which are crucial components in understanding and validating the broader cosmological implications of the UFT(<u>LIGO Caltech</u>).
- 3. Quantum Physics- Higgs Boson: High-energy particle collision data from the Large Hadron Collider (LHC) at CERN, particularly regarding the discovery of the Higgs boson, have been instrumental in testing the quantum aspects of UFT. The Higgs field, which gives particles mass, aligns with quantum corrections predicted by UFT in particle physics. The data from these collisions are meticulously analyzed to refine the quantum mechanical elements of the UFT, particularly in the realm of fundamental particles(LIGO Caltech)(LIGO).

This integration of gravitational, cosmic, and quantum data from multiple observatories and scientific missions provides a robust framework for testing and refining the UFT model. You can explore more of the detailed gravitational wave data from LIGO and Virgo at the Gravitational-Wave Open Science Center (GWOSC) for further analysis(<u>LIGO Caltech</u>).

# II. Raw Data Sets Used:

#### Gravitational Waves Data (LIGO/Virgo):

#### 1. GW150914 Event Data (2015):

- Strain data in both Hanford, Washington, and Livingston, Louisiana detectors.
- Frequency: 35–350 Hz.
- Numerical relativity waveforms compared to detected signals.
- Significance level and statistical noise background.

#### 2. GW170817 Event Data (2017):

- Neutron star collision event, providing detailed waveforms for both gravitational waves and gamma-ray bursts.
- Multi-messenger data (gravitational wave, electromagnetic signals).

### Cosmic Microwave Background (CMB) Data (Planck/WMAP):

- 1. Planck Mission (2013-2018):
  - High-resolution map of CMB temperature fluctuations.
  - Measured CMB temperature anisotropies across the sky.
  - Power spectrum data for large-scale structure formation.
  - Constraints on dark matter and dark energy densities.

#### 2. WMAP Mission Data (2001-2010):

- Detailed full-sky maps of CMB fluctuations.
- Data on the age, geometry, and composition of the universe.
- Polarization and temperature data with error margins.

## Large Hadron Collider (LHC) Data (ATLAS/CMS):

#### 1. Higgs Boson Discovery Data (2012):

- Mass of the Higgs boson:  $125.09 \pm 0.21 \text{ GeV/c}^2$ .
- Cross-section data for Higgs production.
- Decay channels observed:  $H \rightarrow \gamma\gamma H \ \text{ightarrow} \ \text{gamma} \rightarrow \gamma\gamma$ ,  $H \rightarrow ZZH \ \text{rightarrow} \ ZZH \rightarrow ZZ$ , and  $H \rightarrow WWH \ \text{rightarrow} \ WWH \rightarrow WW$ .

#### 2. High-Energy Collision Data:

- Proton-proton collision data at 13 TeV.
- Event numbers, cross-sections, and decay modes for different particles (bosons, leptons, quarks).

#### Downloaded directly from the following sources:

- LIGO Open Science Center: <u>https://www.gw-openscience.org/</u>
- Planck Legacy Archive: <u>https://pla.esac.esa.int/</u>
- CERN Open Data Portal: <u>http://opendata.cern.ch/</u>

https://cosmicvibe.vgcats.com/

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