Unified Vortex-Singularity Theory of Spacetime

Introduction

This document presents a combined framework of two interrelated concepts proposed by Tirth Sathwara: the **Wormhole Vortex Theory** and the **Black Hole Singularity Model**. This unified theory suggests a common underlying principle behind the phenomena of wormholes and black holes, portraying them as manifestations of vortex behavior in spacetime with profound implications on dimensional transitions, causality, and the conservation of information.

Chapter 1: The Nature of Spacetime Vortices

1.1. What is a Spacetime Vortex?

A vortex in spacetime is a region where the fabric of space and time twists due to a massive object's rotation. Much like vortices in fluid dynamics, these are areas of intense gravitational pull and rotational energy.

1.2. Comparing Vortices in Water and Spacetime

- In water, two magnets placed strategically can form a double-sided vortex.
- Similarly, in spacetime, rotating masses (like black holes and wormholes) create vortex-like curvatures that distort spacetime.

Chapter 2: Wormhole Vortex Dynamics

2.1. Dual-Vortex Structure of Wormholes

Wormholes, according to this theory, operate through **two-sided vortices**—imagine a tube where both openings are spinning portals connected by a tunnel of null space.

2.2. Absence of Spacetime in the Core

- At the center of this vortex, due to extreme distortion, **spacetime ceases to exist**.
- There is no space and no time, meaning **the region is entirely outside our universe's domain**.

2.3. Instantaneous Travel

- When an object enters one side of a wormhole's vortex, it is pulled through a region where space and time do not exist.
- Hence, **travel from one point to another appears instantaneous**—no time elapses inside the tunnel.

- Light and matter are unaffected by the universal speed limit because the path is outside spacetime itself.

2.4. Physics Beyond the Tunnel

Since the wormhole's central void is beyond spacetime, **physical laws do not apply** inside the core vortex. This challenges traditional physics and suggests a boundary where general relativity and quantum mechanics both fail.

Chapter 3: Black Hole Singularity as a One-Sided Vortex

3.1. The Funnel Shape of a Black Hole

- Black holes form **a spiraling funnel** shape in spacetime.
- The **upper part** resembles the vortex of a whirlpool.
- The **bottom part**, however, ends in a **point—called a singularity**.

3.2. The Point: A 0th Dimensional Entity

- Unlike wormholes, black holes **do not have an exit point**.
- The singularity is a **dimensionless point**—a location with no length, width, or height.

3.3. Transition from 4D to 0D

- As light or matter falls into a black hole, it transitions from **four-dimensional spacetime** into the **zero-dimensional singularity**.
- This explains why light cannot escape: it no longer travels within spacetime.

3.4. The Fate of Information

- According to this theory, while light loses its existence as physical particles, **its information remains conserved**.
- This is consistent with the **Black Hole Information Paradox**—even though the light can't escape, its quantum information still persists somewhere in the universe.

Chapter 4: Connecting Wormholes and Black Holes

4.1. Common Principles

Both wormholes and black holes: - Are created by **rotational effects** in spacetime. - Generate **vortex-like curvatures**. - Contain regions where **normal spacetime laws break down**.

4.2. Key Differences

Feature	Wormhole	Black Hole
Vortex Type	Dual-sided	Single-sided
Exit Point	Yes	No
Core Dimension	Null space (no spacetime)	Point (0D singularity)
Information Outcome	Teleported instantly	Remains as unobservable info

4.3. Dimensional Transitions

- Wormholes allow **4D to 4D travel via a null zone**.
- Black holes lead **4D matter into 0D existence**.
- In both, **our universe's physics becomes void** in central regions.

Chapter 5: Implications of the Unified Theory

5.1. Beyond the Speed of Light

- Since spacetime doesn't exist inside the vortex, the **speed of light limit no longer applies**.
- Instantaneous transitions become possible, explaining theoretical time travel or teleportation models.

5.2. Physics at the Edge

- The theory hints at **a boundary between spacetime and non-spacetime realms**.
- This could be a step toward unifying **general relativity with quantum gravity**.

5.3. Conservation of Information

- The idea that no information is lost inside black holes aligns with **modern quantum information theory**.
- Suggests that **information remains encoded within spacetime curvature or holographic principles**.

Chapter 6: Visual and Conceptual Analogies

6.1. Vortex in Water

- Wormholes = two magnets in water creating opposing spirals.
- Black holes = a single drain pulling water into a point.

6.2. Highway Without Distance

- Wormholes function like **a folded paper**: two distant points connected directly.
- Inside the fold, space doesn’t exist.

Conclusion

This unified vortex-singularity theory suggests a revolutionary interpretation of cosmic structures. Wormholes and black holes, though different in function, may be siblings born of the same vortex mechanism in spacetime. One opens a tunnel, the other ends in a point. Both challenge our understanding of physics, time, and existence.

This theory could reshape future research in theoretical physics, cosmology, and quantum mechanics by bridging spacetime, singularity, and vortex dynamics into a single elegant structure.

Proposed by Tirth Sathwara