

# Structural Identity: Mass Density as Structural Curvature

Wasfi Ahmed Mohamed Al-Shehadeh

Registration No: F4000 : 62896

December 2025

## 1 The Principle of Structural Identity

In this framework, mass density is directly equivalent to the structural curvature rate. This identity implies that what is perceived as "matter" is the localized manifestation of the spacetime's structural geometry:

$$\rho_m \equiv \mathcal{R}_{str} \quad (1)$$

## 2 Black Hole Singularity: The Maximum Mass Limit

Black holes represent the **Maximum Mass Limit**, resulting from the total collapse of nuclear shells into dense quark bundles. The Event Horizon is redefined as a **Vaporization Coefficient** ( $V_c$ ), acting as a processing limit for matter and light.

### 2.1 The Process of Material Nullification

At the Event Horizon, the structural identity triggers the transformation of matter into nullity through two distinct rates:

- **Fast Electron Vaporization:** Electrons undergo an immediate transition into nullity (non-existence).
- **Slow Quark Vaporization:** Quark bundles transition gradually into nullity, maintaining the core's maximum density limit.

### 2.2 Light Interaction and the Vaporization Limit

The path of light towards the Event Horizon is governed by the Vaporization Coefficient. Light, characterized by **Zero Density** ( $\rho_m = 0$ ), does not "bend" due to gravity; instead, it reaches a terminal point where it is processed by the vaporization limit:

$$\text{Light Path} + V_c \implies \text{Structural Nullification} \quad (2)$$

### 3 Visual Deception vs. Gravitational Curvature

The disappearance of light at the Event Horizon is redefined as a **\*\*Visual Deception\*\*** ( $D_v$ ) rather than gravitational entrapment. Since light possesses Zero Density ( $\rho_m = 0$ ), it cannot be "pulled" by gravity. Instead, the interaction with the Vaporization Coefficient ( $V_c$ ) leads to a structural termination of the visual signal.

The fundamental equation for Visual Deception is expressed as:

$$D_v = \int (L_p \cdot V_c) \implies \text{Null Signal} \quad (3)$$

Where:

- $D_v$ : Visual Deception (The illusion of light disappearance).
- $L_p$ : Light Path (The linear structural propagation).
- $V_c$ : Vaporization Coefficient at the Maximum Mass Limit.

This confirms that the "Black" in Black Holes is not an area of trapped light, but a zone where the light's structural identity is nullified, creating a perceptual void.

$$F_q(\text{Interaction}) \equiv L_{\text{path}} \quad (4)$$

### 4 Black Hole Singularity

Black holes represent the **\*\*Maximum Singularity\*\*** due to the collapse of nuclear shells, leading to:

- **Fast Vaporization**: Rapid release of electrons (Tabeen).
- **Slow Vaporization**: Slow decay of the quark core.