

The Mass of the Photon 2.0

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Directional Physics – Mass of a Liberated String, Confinement Structure, Indirect Measurement, and Photon Gravitation

1. Introduction

In my directional physics, the photon is not a massless particle. It is a **liberated string**, extracted from the internal confinement of a massive particle. This liberated string carries **directional tension**, which manifests as an **infinitesimal dynamic mass**.

Photon mass cannot be measured directly because:

- the photon never exists at rest,
- its mass is purely dynamic,
- its tension is frequency-dependent,
- and its confinement has been removed.

This upgraded document presents the full formulation of photon mass, including the new principle:

The mass of a photon equals the mass of a single confined string, measurable only through an indirect method.

2. Confinement Structure and String Count

A massive particle in my model is a **directional confinement** containing:

- a central directional nucleus,
- a set of vibrating strings,
- internal tension distributed across these strings.

If a particle has:

- total mass M ,
- and contains N confined strings,

then the mass contribution of each string is:

$$m_{\text{string}} = \frac{M}{N}$$

This is the **fundamental unit of directional mass** inside a confinement.

3. Photon Emission as String Liberation

When a particle emits a photon, it does not emit “light” in the classical sense. It **liberates one of its confined strings**.

This liberated string becomes:

- a photon,
- a tension carrier,
- a directional wave,
- an object in perpetual motion.

Thus, the photon is literally:

a single confined string, freed from its confinement.

4. The Mass of the Photon

Since the photon is a liberated string, its mass is:

$$m_{\text{photon}} = m_{\text{string}} = \frac{M}{N}$$

This mass is:

- infinitesimal,
- dynamic,
- impossible to measure at rest,
- proportional to the original confinement’s mass distribution.

The photon’s mass is not a rest mass. It is a **directional tension mass**, expressed only through motion.

5. Why Photon Mass Cannot Be Measured Directly

Photon mass is unmeasurable directly because:

- the photon never stops,
- its tension is frequency-dependent,

- its confinement is absent,
- its mass is distributed along a vibrating string,
- measurement instruments require rest states.

Thus, photon mass is:

real, but inaccessible through direct measurement.

It exists only as **dynamic tension**, not as static inertia.

6. Indirect Measurement of Photon Mass (Directional Method)

Although the photon's mass cannot be measured directly, it **can** be determined through an indirect method based on confinement analysis.

Step 1 — Measure the mass of a confined particle

Take a particle with known mass M . This mass is measurable.

Step 2 — Determine the number of confined strings

The particle contains N strings. This number is defined by its directional structure.

Step 3 — Compute the mass of a single confined string

$$m_{\text{string}} = \frac{M}{N}$$

This is the mass of one tension unit inside the confinement.

Step 4 — Identify the liberated string as the photon

When the particle emits a photon, it liberates **exactly one string**.

Thus:

$$m_{\text{photon}} = m_{\text{string}}$$

Why this is an indirect method

Because:

- I do not measure the photon itself,
- I measure the particle that emitted it,
- I reconstruct the photon's mass from the confinement structure.

This is the only coherent method in my directional physics.

7. Photon Gravitation and Black Hole Capture

A black hole can capture photons. In classical physics, this is explained by spacetime curvature.

In my directional physics, it is explained by:

- the photon's directional tension,
- its minimal but real mass,
- its sensitivity to extreme directional gradients,
- the collapse of directional geometry near the event horizon.

A photon is captured because:

its liberated string still carries mass.

Even infinitesimal mass is enough for gravitational interaction.

8. Directional Energy Equation and Photon Mass

My upgraded energy relation:

$$E = E_1 + E_2 = Mc^2$$

shows that mass is the sum of **directional tensions** inside a confinement.

Since a photon is a single tension unit liberated from the confinement, its mass is:

$$m_{\text{photon}} = \frac{M}{N}$$

and its energy is:

$$E_{\text{photon}} = m_{\text{photon}}c^2$$

This unifies:

- mass,
- energy,
- tension,
- frequency,
- confinement geometry.

9. Implications for Directional Physics

Photon mass 2.0 explains:

- gravitational bending of light,
- photon capture by black holes,
- radiation pressure,
- frequency-dependent energy,
- wave-particle duality,
- the directional nature of electromagnetic propagation.

It establishes the photon as:

a real physical object with infinitesimal mass, not a mathematical abstraction.

10. Final Statement

The photon possesses a **directional mass equal to the mass of a single confined string**.

This mass is infinitesimal, dynamic, and impossible to measure directly. It can only be determined through an **indirect confinement-based method**.

The photon is not massless.

It is a liberated string with directional mass in perpetual motion.