Main Text:

1. Light Is Not a Classical Electromagnetic Wave

In traditional physics, light is defined as an electromagnetic wave — oscillations of electric and magnetic fields propagating through space. However, this leads to a paradox: if light is truly an electromagnetic entity, why is it not measurably affected by Earth's magnetic field? This contradiction suggests that light may not be inherently electromagnetic, but merely exhibits electromagnetic-like behaviors due to its structural characteristics.

We propose:

> **Light is not a carrier of electric or magnetic fields — it is a trend structure that exhibits certain electromagnetic responses under specific conditions.**

2. Light as Trend Fragments: Explaining Dispersion and Spectrum

Under the "Trend Fragment Theory," light is composed of fragments of trend units — basic entities that respond to directional force but lack fixed structure. During nuclear fusion inside stars, massive quantities of energy and pressure cause partial collapse of unstable structural formations, resulting in incomplete, semi-formed fragments — these become "light."

These fragments vary in size and structural integrity. When they encounter condensed matter (such as glass or water), their interaction is not uniform, leading to:

- **Refraction**: because smaller or asymmetric fragments deflect more strongly when passing through tight atomic arrangements.
- **Dispersion**: different sizes and tensions of fragments lead to differentiated paths, forming continuous spectra when passed through a prism.

Thus, the wide color band of sunlight's spectrum reflects the diversity of fragment sizes and structures, supporting the idea that:

> **Natural light is not a unified wave, but a chaotic stream of trend fragments.**

3. Why Light Shows Both Wave and Particle Behavior

The famous double-slit experiment reveals that light can interfere like a wave, yet exhibit quantized, particle-like detection. This duality is often explained using wave-particle complementarity, but it can be elegantly reframed within trend theory:

- Each trend fragment possesses dynamic freedom, capable of shifting its path slightly based on environmental interaction.
- When two slits are present, overlapping influence zones create interference patterns not due to "self-interference," but from statistical deflection across many fragments.

Furthermore, when observed or "measured," part of the fragment's structure becomes bound — its trend is momentarily "fixed" into a quasi-structure, leading to the appearance of particle-like collapse. This process echoes the concept of **trend knotting** — where multiple trend nodes, once locked together, lose their free transformation and display fixed structural behaviors.

4. Why Artificial Light Appears Different from Sunlight

The article distinguishes between sunlight and artificial light, noting that:

- **Sunlight** is composed of natural trend fragments formed by immense nuclear processes. These fragments vary widely in size and energy.
- **Artificial light** (like LEDs or lasers) is a filtered or selected emission, often constrained to narrow frequency bands. This is why its spectrum appears narrower and more uniform.

Therefore, only natural light can fully demonstrate the chaotic and multi-faceted behavior predicted by trend fragment theory.

5. Conclusion: A New Paradigm for Light's Structural Essence

The "Trend Fragment" view does not aim to disprove modern optics or quantum electrodynamics, but to provide a **structural interpretation at a deeper layer**. It suggests:

- Light is a byproduct of failed structural formation — broken pieces of trend attempts.
- Its behaviors (diffraction, interference, refraction, polarization) emerge naturally from its unstructured, semi-cohesive state.
- Under special conditions (e.g., information entanglement or measurement), trend fragments exhibit structural behavior temporarily, mimicking particle properties.

This model offers a fresh angle for exploring the true fabric of physical phenomena — not through field equations or probability clouds, but through trend structures and their dynamic transformations.