Tonus Veritatis

A Physics-Anchored Framework for Tonal Gravity and Musical Perception

Abstract

Tonus Veritatis is an alternative theoretical framework for tonal organization that defines pitch, harmony, and tonal motion through **gravitational anchoring rather than functional progression**. Unlike traditional Western tonal theory, which derives structure primarily from historical harmonic conventions and resolution-based form, Tonus Veritatis reframes tonality as a **perceptual and physical system** grounded in measurable relationships: frequency, ratio, propagation, and psychological stability.

At its core, Tonus Veritatis treats *tonal gravity* as a stable attractor that governs listener perception over time. Rather than prioritizing cadence, modulation, or functional hierarchy, the system emphasizes **tonal inevitability**—the sense that a pitch center exerts influence independent of formal resolution. This allows tonal identity to remain intact across extended durations, non-repeating structures, and generative contexts without reliance on conventional harmonic syntax.

The framework integrates mathematical and physical considerations, including frequency ratios, overtone structures, metric relationships, and propagation characteristics, while remaining agnostic to any single tuning system. Equal temperament, just intonation, solfeggio-derived systems, and alternative divisions of the octave can all be expressed within Tonus Veritatis, provided they establish a stable perceptual anchor. In this sense, the system is not prescriptive about *which* tones are used, but about *how tonal stability is maintained and perceived*.

A distinguishing feature of Tonus Veritatis is its explicit separation of **tonal gravity** from **compositional form**. Tonal identity is treated as a persistent field rather than a sequence of events, enabling long-form, through-composed, or non-episodic musical structures to retain coherence without repeating themes or resolving gestures. This makes the framework particularly suited to modern compositional practices, including ambient music, cinematic underscore, ritualistic forms, and generative or algorithmic systems where traditional form-based resolution is either impractical or undesirable.

Importantly, Tonus Veritatis is designed to interface naturally with generative music systems. By defining tonal behavior as a continuous gravitational condition rather than a rule-based progression, it allows autonomous systems to operate within a constrained tonal space while remaining expressive and varied. This positions the framework as a potential bridge between human tonal perception and machine-generated music, where stability, identity, and listener trust must be preserved without rigid formal scripting.

Tonus Veritatis does not seek to replace existing tonal theories, but to **expand the conceptual vocabulary** available to composers, theorists, and technologists. It offers a lens through which tonal coherence can be understood as an emergent property of physical and perceptual constraints, rather than as a byproduct of historical form. As such, it provides a foundation for future exploration in advanced composition, music cognition, instrument design, and AI-assisted music generation.