
# Specular Field Theory

*Executive Summary*

Valentina Moroni
Specular Technologies Ltd
ORCID: 0009-0009-5931-1106

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## Executive Summary

**The problem.** Quantum systems lose coherence over time, and this loss (decoherence, scrambling) is difficult to predict and control. Current approaches require extensive hardware resources and system-specific modelling.

**The proposal.** The Specular Field Theory (SFT) introduces a minimal geometric extension in which time itself carries informational curvature. Instead of imposing dynamical assumptions, the SFT derives informational behaviour from the geometry of time.

**The prediction.** In the weak-field limit, the theory yields a *parameter-free prediction* for the ratio of scrambling exponents between two circuit configurations. Once a single reference measurement fixes the global scale, all subsequent predictions are parameter-free.

**The advantage.** The weak-field test can be validated using *minimal circuit-based tests* and *existing quantum datasets*, reducing resource requirements and broadening access to quantum validation. No new hardware is required.

I welcome conversations with researchers and industry groups working on quantum dynamics, scrambling behaviour, or quantum-simulation datasets, to explore whether the weak-field prediction may align with ongoing experimental or simulation efforts.

**Contact.**
Valentina Moroni
Founder, Specular Technologies Ltd
ORCID: `0009-0009-5931-1106`
Email: `valentina@speculartech.uk`

*Collaboration is warmly welcomed at any level, from conceptual discussion to joint experimental design.*