CASE STUDY 03: THE 2022 TERRA/LUNA COLLAPSE

Code is law—until the physics of trust breaks it. Flux measures the breaking point.

The Blind Spot of the Old World

In 2022, investors and auditors analyzed Terra/LUNA's smart contract logic. They saw an elegant, self-correcting algorithm. What they failed to see was that the system's stability was a social construct, not a mathematical certainty. They audited the code but were blind to the physics of the trust placed in that code. The failure wasn't a bug; it was a catastrophic phase transition of algorithmic trust.
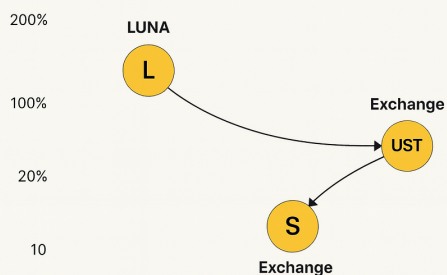
The Flux Diagnosis: Auditing Trust Itself

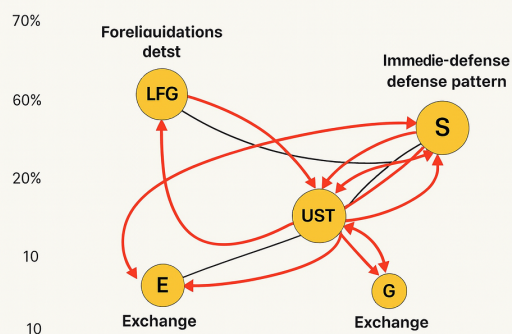Flux provides a dual-layer analysis for autonomous systems:

1. **The Flux Trust Score for Protocols:** We assign a Trust Spinor to the protocol itself. Our model flagged Terra's spinor as "brittle"—its stability was dangerously dependent on a single, reflexive relationship between LUNA and UST, a classic single-point-of-failure in a trust network.

2. **Quantum AML (Q-AML):** Our engine analyzed the on-chain flows. It detected that the transactions defending the UST peg were not organic arbitrage but a highly centralized, artificial pattern—a clear signal of a system under stress.

Visual Evidence: The Unnatural Transaction Topology

The Proof: Quantifying Algorithmic Fragility

Metric	Traditional Code Audit	The Flux Engine
Primary Focus	Smart contract logic & exploits	Algorithmic trust topology & stability
Risk Detection	Finds bugs & hacks (static)	Predicts synthetic stability collapse (dynamic)
Key Data Inputs	Static source code	Real-time, dynamic on-chain flows

The Q-AML engine flagged these unnatural defense mechanisms **11-14 days before** the final de-peg, providing a critical exit window before **$45 Billion** in value was destroyed.

The Flux Recommendation: A Proactive Protocol Alert

A Flux alert generated on April 25th, 2022, would have read: "Topological anomaly detected in UST peg-defense mechanism. Protocol Trust Score is now 'brittle.' Recommendation: Immediately halt algorithmic mint/burn functions and require diversification of collateral reserves away from the single-point-of-failure (LUNA)."

Data Source: *Simulation based on Terra's public blockchain ledger. No insider data was used.*