

ACTP — Complete Next Formal Steps

1. Formal Definition of Admissibility α

Admissibility is defined as a set-valued gate $\alpha(s,t) \in \{0,1\}$ determined by bounded volatility, regime coherence, and liquidity continuity. α is monotone decreasing under stress and never increases exposure.

2. No-Blowup Lemma

Lemma: Under bounded volatility and monotone admissibility gating, portfolio exposure remains finite. Proof sketch: exposure updates are multiplicative with $\alpha \leq 1$, preventing runaway growth.

3. Matrix State Space

Define state space $S = \text{Asset} \times \text{Timeframe} \times \text{Regime} \times \text{Admissibility}$. Transitions are permitted only when admissibility is preserved or reduced, never expanded.

4. Adversarial Survivability

Stress cases include regime flip, volatility spike, and liquidity loss. Naive systems fail due to exposure escalation; ACTP survives by freezing or reducing state transitions.