

E — Entropy/Energy

Core 4

- Ledger energy.
- Ledger entropy.
- Rest/action duality.
- Monotones.

Extended Roles

- Thermodynamics: memory \leftrightarrow entropy dual.
- Information theory: compression \leftrightarrow energy.
- Biology: ATP storage \leftrightarrow firing entropy.
- Phase transitions: snap states as critical points.

Super-State Closure

- Any lawful system must balance storage and spread; entropy/energy dual is unavoidable.