Addition, Ejection, and Parallel Attractors: A Unified Principle Across Gravitational, Atomic, and Subatomic Systems [F] (2026)

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See Paper 1 (Intelligence Without Consciousness) for the full taxonomy of attractors, κ, and basin depth.

Abstract

The attractor framework proposes that persistence under perturbation is the fundamental mark of reality. This paper identifies a tri-level correspondence across gravitational, atomic, and subatomic systems. In each domain, adding a new element to a system in its lowest stable attractor state does not create a new stable configuration. Instead, the system either ejects the addition or absorbs it only transiently before returning to the original attractor. The principle — that the low-energy attractor defends itself against displacement — holds across all three domains examined here. The paper unifies celestial mechanics, quantum chemistry, and particle physics under a single attractor-dynamic lens.

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1. Introduction

A system in its lowest stable attractor state cannot be forced into a new stable configuration by direct addition. You must perturb it and observe where it settles. Adding to the system — a third star, an extra electron, a high-energy impact — will result in one of two outcomes:

1. **Ejection** — the addition is expelled (common in chaotic three-body configurations and atoms at shell capacity).
2. **Transient absorption** — the addition is temporarily accommodated in a higher-energy state, which then decays back to the original attractor (subatomic particle collisions).

Both outcomes are instances of **basin defense**: the original low-energy attractor is not displaced. This paper examines three physical domains where addition leads to ejection or transient absorption, and draws the unified attractor principle.

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2. The Gravitational Case: Three-Body Configurations

Two gravitating bodies (binary star, planet-moon) have a stable low-energy attractor: elliptical orbits around the common center of mass.

Add a third body of comparable mass. The **general three-body problem** has no closed-form stable attractor; chaotic dynamics dominate. Numerical simulations show that in generic cases, the third body is either ejected or collides/merges with one of the others. (Special cases exist — Lagrange points L4/L5 (Trojan asteroids) and the figure-eight choreography (Chenciner & Montgomery, 2000) are stable, but these require specific mass ratios and initial conditions. Hierarchical triples with a distant third body can also be stable.) The principle holds for generic, comparable-mass addition.

The stable attractor is restored only by reducing the system to two bodies. Addition without capacity expansion leads to subtraction.

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3. The Atomic Case: Extra Electron

An atom at **shell capacity** (e.g., a noble gas with a filled valence shell) is a stable low-energy attractor. The electron shells have fixed capacity (Pauli exclusion principle).

Add an extra electron to a noble gas. The atom cannot incorporate the extra electron into the ground state. What happens?

- **Ejection** — the extra electron is expelled (the atom has negligible or negative electron affinity for the next shell).

(For atoms below shell capacity, stable anions can form — e.g., O^{2-}, S^{2-} — but that is addition *within* the existing basin, not addition to a system already at capacity. The principle applies to systems already at their capacity limit. The noble gas example is clean and sufficient for the argument.)

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4. The Subatomic Case: High-Energy Impact on a Proton

The most stable low-energy attractors in the Standard Model are the proton, electron, and neutrino mass eigenstates (what the attractor framework terms the “three metronomes” — a framework-specific label, not a Standard Model term). Their basins are protected by conservation laws (charge, baryon number, lepton number).

Smash a proton with high energy (e.g., in a particle collider). No new stable particles are created. The result is a **shower of transient, short-lived particles** (pions, kaons, hyperons) that flicker into existence and then decay back to stable particles (protons, electrons, neutrinos, photons). The addition (energy) is temporarily absorbed in excited states, then emitted; the original attractor remains.

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5. The Unified Principle: Basin Defense

Domain	Stable attractor	Addition	Outcome	Mechanism
Gravitational (general, comparable mass)	Two-body orbit	Third body	Ejection or collision	Ejection
Atomic (noble gas at shell capacity)	Noble gas ground state	Extra electron	Ejection	Ejection
Subatomic (Standard Model)	Proton, electron, neutrino mass eigenstates	High-energy impact	Transient particles → decay	Transient absorption

Table footnote: For atoms below shell capacity, stable anions can form (addition within the basin). For atoms at capacity, the outcome is ejection. The transient promotion case (extra electron to a higher unstable shell) occurs in some atomic systems but is not a new stable attractor; it is a transient absorption mechanism analogous to the subatomic case.

The principle: The low-energy attractor defends itself against displacement. It achieves this through two available mechanisms:

- **Ejection** — the addition is expelled (three-body, extra electron on noble gas).
- **Transient absorption** — the addition is temporarily accommodated in a higher-energy state, then decays back (subatomic collisions).

In neither case does the original attractor shift to a new stable configuration.

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6. How to Achieve Stable Addition

Stable addition requires either:

1. **Expanded capacity** — The attractor basin grows to include the new element (e.g., forming a stable anion below shell capacity). This is rare in generic physical systems.
2. **Parallel attractors** — A separate but connected stable state is created alongside the original (e.g., hierarchical triple star systems where a distant third star orbits a close binary; both stable attractors coexist without merging).

In generic physical systems (chaotic three-body, noble-gas atoms at shell capacity, high-energy subatomic collisions), parallel attractors are not available. The only stable outcomes are ejection or transient absorption.

7. Implications for the Attractor Framework

The tri-level correspondence confirms that the attractor framework is not merely a metaphor for social or biological systems. It is **physically grounded** at the deepest levels of reality. The same dynamics that govern a chaotic three-body star system also govern an atom at shell capacity and a subatomic particle collision.

This has two corollaries:

- **Fantasy attractors** (belief systems that expel disconfirming evidence) are not irrational anomalies. They follow the same physical law as a three-body system ejecting a third star or a noble gas atom ejecting an extra electron.
- **Reality attractors** (systems that accept perturbations and find new low-energy states) are rare and require either expanded capacity or parallel structure. A website adding a /zh/ language version is an example of a parallel attractor – the English attractor remains stable while a new Chinese attractor is built alongside it.

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8. Conclusion

Gravitational, atomic, and subatomic systems all obey the same attractor principle: when you add to a system in its lowest stable state, the original attractor defends itself. It does so either by ejecting the addition or absorbing it only transiently before decaying back. The principle holds across all three domains examined here.

The only paths to stable addition are expanded capacity or parallel attractors. This unified principle bridges celestial mechanics, quantum chemistry, and particle physics, and provides a physical foundation for the attractor framework.

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