

Mathematical Framework for Natural, Recursive, and Dimensional Nuclear Events in the Unified Theory of Energy

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Abstract

This paper presents a mathematical formulation of nuclear events within the framework of the Unified Theory of Energy (UTE). It describes how nuclear fission and fusion occur naturally and recursively across dimensions, independent of centralized energy monopolies. The mathematical analysis indicates that centralized power generation introduces a high probability of catastrophic failure, posing extreme risks for the benefit of a select few. The equations developed here demonstrate that any sustainable and safe nuclear energy process must be distributed and regulated to avoid systemic collapse.

1 Introduction

The conventional understanding of nuclear fission and fusion is constrained by institutional frameworks that prioritize centralization and economic control. However, within the UTE framework, nuclear interactions occur recursively across dimensions and naturally in mass structures without requiring artificial containment. This section introduces the core mathematical principles governing these processes.

2 Recursive and Dimensional Energy Cascades

Energy transitions between dimensional states are defined as follows:

$$E(D) = \int_D^{D-1} \nabla E \cdot dA, \quad (1)$$

where $E(D)$ is the energy contained within a mass structure at dimension D , and ∇E represents the energy gradient as it cascades into lower dimensions.

Fission events are defined as a forced transition from $D = 3$ (mass structure) to $D = 0$ (free particles), violating natural recursive stability:

$$\frac{\partial M}{\partial t} = -\alpha \nabla E, \quad (2)$$

where M represents mass, and α is a proportionality constant that depends on energy state interactions.

3 Catastrophic Risk Analysis of Centralized Nuclear Power

The probability of uncontrolled energy cascade from a nuclear event is given by:

$$P_{cat} = 1 - e^{-\lambda \frac{E_{fission}}{E_{local}}}, \quad (3)$$

where $E_{fission}$ is the artificially induced energy release, E_{local} is the naturally contained energy within a mass structure, and λ is a risk coefficient dependent on system instability.

In centralized nuclear power, $E_{fission} \gg E_{local}$, making $P_{cat} \rightarrow 1$ as energy concentration increases. This demonstrates that centralized power structures mathematically induce high-risk scenarios for catastrophic failure.

4 Necessity of Distributed Nuclear Processes

To mitigate risk, fusion and fission must be governed by:

$$\sum_{i=1}^n \frac{E_i}{D_i} \leq \frac{E_{safe}}{D_{natural}}, \quad (4)$$

where energy transactions E_i across dimensions D_i must not exceed the naturally stabilized energy states. This implies that nuclear energy generation must be distributed and dynamically regulated to maintain dimensional equilibrium.

5 Conclusion

Mathematically, nuclear energy is not an isolated technological process but a recursive, natural event that follows dimensional transitions. When centralized, it results in near-certain catastrophe due to forced energy cascades outside of natural equilibrium. Safe nuclear energy must be distributed and regulated to ensure sustainability without systemic collapse.