

### 1. The Problem Posed

Nuclear fission and fusion, as two of the most significant breakthroughs in 20th-century physics, are typically explained via mass-energy equivalence ( $E=mc^2$ ) and nuclear force models. However, within the framework of Structural Theory, we attempt to re-express their fundamental processes with the logic that "energy arises from structural change."

### 2. Electron Cloud and Atomic Nucleus: Layers of Structure

Traditionally, the atomic nucleus is composed of protons and neutrons, surrounded externally by an electron cloud, forming a stable structure. In fact, the electron cloud acts as a "structural boundary," preventing the nucleus from excessive external perturbation. Both nuclear fission and fusion require a breach of this boundary — this "breach," in Structural Theory, is seen as a folding at the critical structural threshold.

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### 3. The Logic of Structural Disintegration and Energy Release

We believe that the atomic nucleus remains stable because its protons and neutrons exist in a tightly "interlocked" structural arrangement. The key to fission is that, under high pressure or impact, this structure generates a penetrable channel — in fact, a microscopic structural folding point across multiple dimensions.

Once such a folding point is formed, it causes nearby atoms of the same element to experience "resonant excitation" due to their identical structural frequencies, leading to a structural resonance reaction. In Structural Theory, the chain reaction of nuclear fission is not merely a mechanical collision of protons and neutrons, but a collapse triggered by structural resonance among same-frequency atomic cores.

### 4. Structural Supplement to the Detonation Mechanism of Atomic Bombs

In an atomic bomb, a "detonator" is required to trigger the nuclear reaction. This does not simply serve as an energy input, but as a means to create a "critical structural disintegration field." This field causes the first atomic nucleus to crack open structurally, thereby inducing countless surrounding nuclei to undergo synchronous structural collapse in a very short time, releasing massive amounts of energy.

### 5. Structural Interpretation of Nuclear Fusion

Unlike fission, fusion involves the merging of atomic nuclei. In Structural Theory, nuclear fusion is seen as a logic of structural compression and reorganization. When multiple nuclei are compressed under extreme pressure and heat, they reach a co-structural pressure point

where their internal interlocking mechanisms are reorganized, creating new atomic nuclei and releasing surplus protons, neutrons, or energy.

This energy release is similarly accompanied by structural reorganization and critical perforation under spatial compression.

## 6. Conclusion

This article reexamines nuclear fission and fusion through the lens of Structural Theory, aiming to reinterpret nuclear reactions with the logic that "energy originates from structural transformation." This not only provides a structural-level supplement to current nuclear energy technology but also demonstrates further applications of Structural Theory within the microscopic realm.

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