

## Keywords

The following keywords have been selected to represent the core concepts, methods, and implications of the manuscript “Information Ontology: Rewriting the Foundations of Physics”:

1. **Information Ontology**
  - Primary concept introducing information as the fundamental substrate of reality
  - Bridges physics and information theory in a novel paradigm
2. **Quantum Foundations**
  - Addresses fundamental interpretational issues in quantum mechanics
  - Connects to quantum measurement problem and non-locality
3. **Theoretical Physics**
  - Encompasses the broader field of fundamental physical theories
  - Allows indexing within mainstream physics literature
4. **XOR-SHIFT Operations**
  - Highlights the novel mathematical formalism introduced
  - Represents the specific mechanics of information manipulation in the theory
5. **Unified Field Theory**
  - Positions the work within the context of unification attempts in physics
  - Connects to the goal of reconciling quantum mechanics and relativity

## Selection Rationale

These keywords have been strategically selected to: - Maximize discoverability across multiple disciplines (physics, information theory, philosophy of science) - Balance specificity (XOR-SHIFT Operations) with generality (Theoretical Physics) - Emphasize both methodological innovations and theoretical implications - Facilitate appropriate categorization within Science journal’s taxonomy - Appeal to researchers across quantum foundations, information theory, and unification efforts

## Alternative Keywords Considered

The following additional keywords were considered but not included in the final selection: - Quantum Gravity (too specific to one application of the theory) - Information Theory (too broad without the ontological context) - Black Hole Thermodynamics (represents only one application area) - Physical Reality (too philosophical for primary indexing) - Quantum Information (could be mistaken for quantum computing applications)