

## Media Summary

For over a century, scientists have struggled to reconcile quantum mechanics with Einstein’s theory of gravity. This research introduces a groundbreaking approach that views reality as fundamentally made of information rather than matter. Using two simple operations—XOR (finding differences) and SHIFT (changing perspectives)—we show how both quantum mechanics and relativity can be derived from the same mathematical foundation.

Our theory offers practical predictions that can be tested with current technology, including new signatures in quantum measurements and distinctive patterns in gravitational waves. If verified, this unified framework could revolutionize our understanding of black holes, the early universe, and the transition between quantum and everyday physics.

“This approach suggests that the universe operates like an information processing system where reality emerges from differences between states rather than absolute properties,” explains the author. “It’s as if the universe doesn’t care about ‘what is’ but only about ‘how things differ’ and ‘how perspectives shift’—a profound simplification of our fundamental understanding.”

Word count: 146

Version: v38.0