**Black holes, Information, and the World as a Hologram**

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By swallowing entropy or information, black holes appear to violate both the Second Law of Thermodynamics, and the unitarity of Quantum Mechanics. Yet there are compelling arguments that in fact, both of these laws survive. By insisting that they do, we gain deep insights into Quantum Gravity, such as the "holographic principle": the information content of regions fundamentally scales only with their boundary area, not with their volume. I will describe a precise formulation of this surprising statement, and the considerable evidence for its validity. Another implication of unitarity was recognized only recently, and remains controversial: spacetime must come to a sudden end—a "firewall"—at the horizon of a black hole, in blatant conflict with General Relativity.