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Black Holes Information Paradox & Fuzzball model of Blackholes.

What we found from string theory is that all the mass of a black hole is not getting sucked into the center.
The black hole tries to squeeze things to a point, but then the particles get stretched into these strings, and the strings start to stretch and expand and it becomes this fuzzball that expands to fill up the entirety of the black hole.
The Fuzzball model of Blackhole attempts to resolve two intractable problems that classic black holes pose for modern physics, which are the Information Paradox and point of Infinity Density (Singularity).

The event horizons for both classic black holes and fuzzball lie precisely at the point where spacetime has warped to such an extent that falling bodies just achieve the speed of light. Consider a collection of D3-branes, in their ground state. Suppose a graviton falls onto these branes and is absorbed. The graviton, and its energy is converted into a collection of open strings (gluons) on the D3 branes. As time passes, this excitation spreads on the surface of the D3 branes, the evolution being described by strongly-coupled super-Yang-Mills theory.

This evolution is very complicated, but it does not involve gravity and is unitary because Yang-Mills theory is unitary. The dynamics of a gravitational process can be captured completely by a dual boundary theory, which is manifestly unitary (and does not involve gravity).

There is an enormous body of evidence saying that this duality is correct. In the fuzzball paradigm, this duality covers black holes in a natural way: there are states in the boundary field theory that can be thought of as dual to microstates of a black hole, and, in the gravity description, these states are just fuzzballs, with no horizon. Thus there is nothing conceptually different between non-black-hole states and black-hole states: any state in the boundary field theory is described in gravity as some excitation of string theory without any horizon. Indeed, in the fuzzball paradigm, the black hole is a very messy quantum state and a graviton
falling into this object would evolve in a very complicated way as it reaches the horizon radius.
The dynamics of this process can be captured by either the holographic field theory at the boundary (which is unitary, and does not involve gravity), or through the gravitational dynamics of the fuzzball state. Replacing the convenient general relativistic picture of black holes as empty space, with all its mass located in its center, with a ball-shaped mess of interacting strings is fascinating and will open windows for further explanation in Cosmology.

Author: SINGH, Swapnil

Presenter: SINGH, Swapnil