



Contribution ID: 32

Type: **not specified**

## A quantum cosmic censorship

*Tuesday, 21 July 2015 16:00 (30 minutes)*

We propose to investigate the Cosmic Censorship Conjecture in the quantum domain by means of the horizon wave-function (HWF) formalism applied to a spherically symmetric Gaussian state. When the charge-to-mass ratio  $q < 1$ , the formalism allows for a straightforward quantum mechanical description of both inner and outer horizons. For  $q > 1$ , where the classical theory predicts a naked singularity, one can still obtain a normalisable HWF below a critical value  $q^2$ , with a non-vanishing probability of being a black hole instead. However, the HWF is not normalisable above  $q^2$ , and the uncertainty in the location of the horizon blows up there, signalling that such states are indeed not well-defined and most likely very unstable.

**Primary author:** CASADIO, Roberto (Alma Mater Bologna University)

**Co-author:** Dr MICU, Octavian (Institute of Space Science)

**Presenter:** CASADIO, Roberto (Alma Mater Bologna University)

**Session Classification:** Senior scientist session 1

**Track Classification:** Seniors