Title: Strings/Quantum Gravity 4

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Abstract:

Note Title 6/2/2006

Hairpin Branes and D-Branes Behind the Horizon.

Moshe Rozali, UBC

with Kazumi Okuyama hep-th/0602060

JHEP 0603:071. (more refs in paper).

Outline:

* 2dim Strings and holographic (Matrix) description.

* 2dim Black holes, Euclidean and Lorentzian.

  (holographic description? look at 0-branes)

* 0-Branes : trajectory, smearing, radiation.

* 0-Branes : analytic continuation, world-volume theory.

* Conclusions: towards holographic description of 2dim Lorentzian black hole.

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Euclidean CFT :

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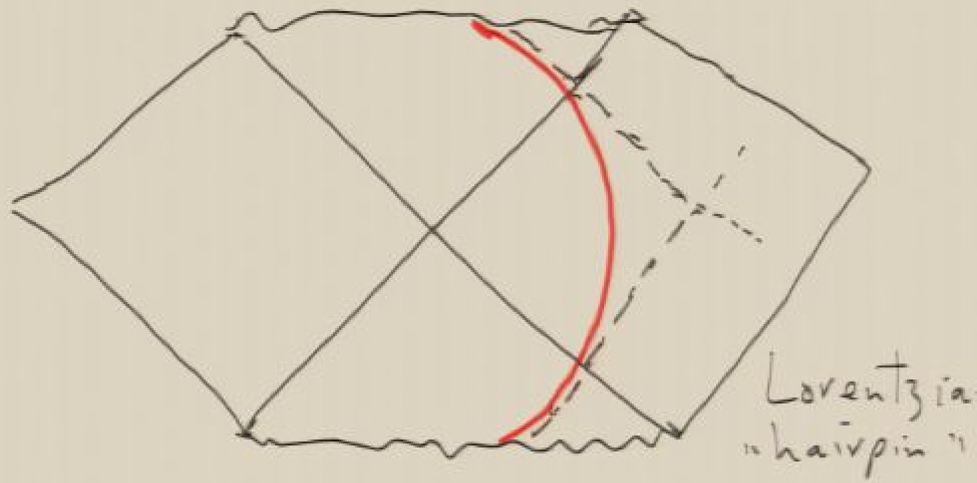

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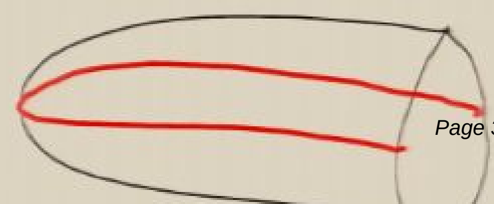
$$\cosh(t)\,\sinh(\rho) = \text{Constant (modulus)}$$



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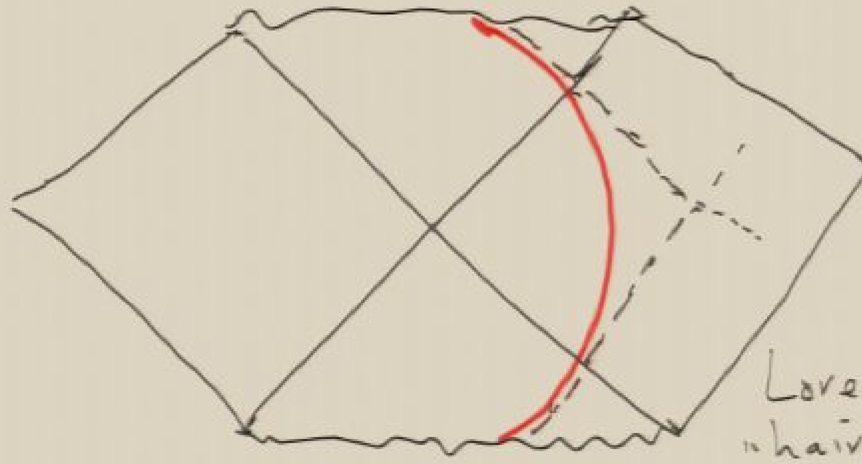

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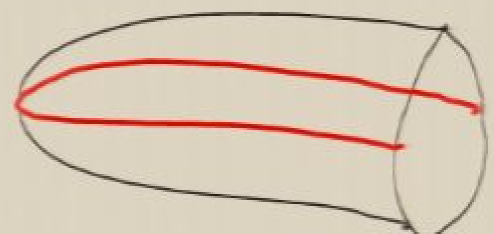

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The acceleration determined by parameter Q.

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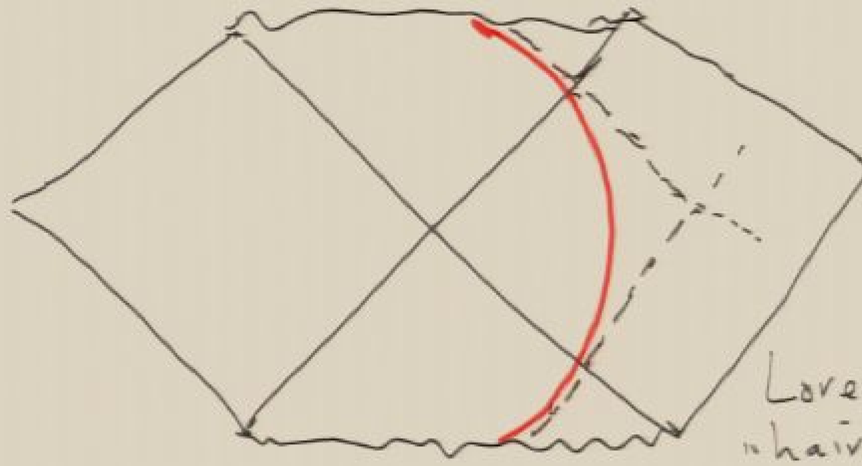

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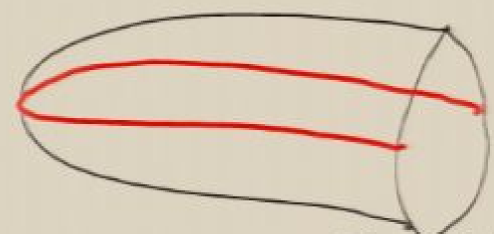

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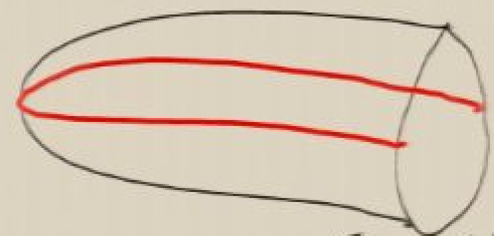

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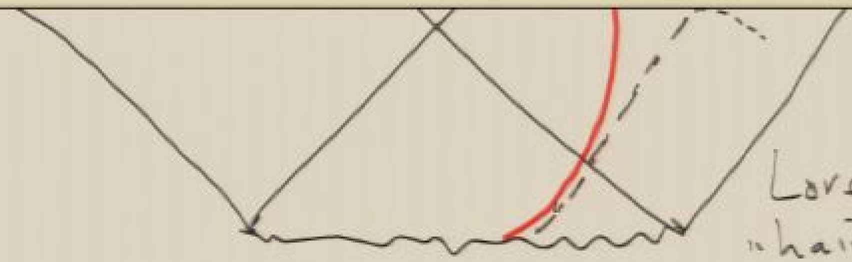

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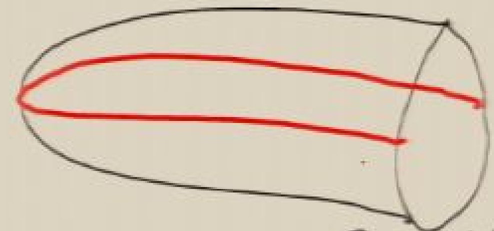

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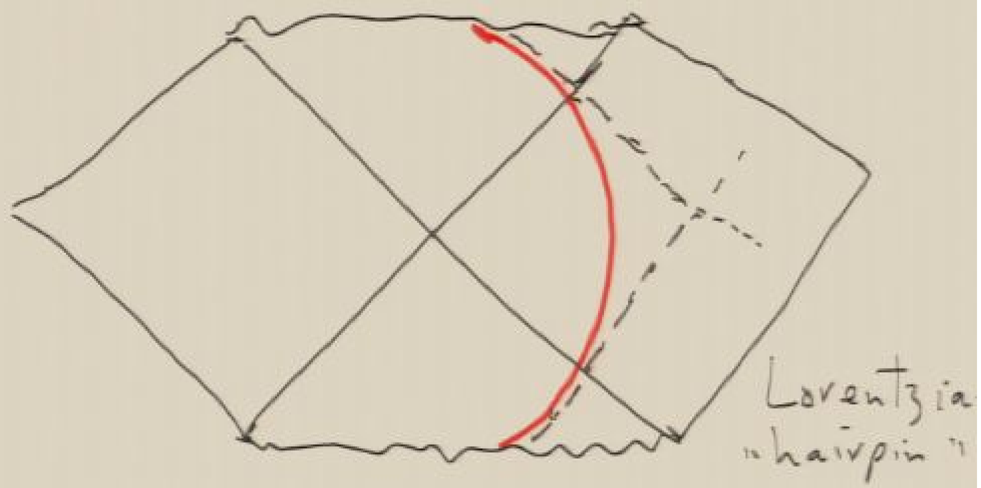

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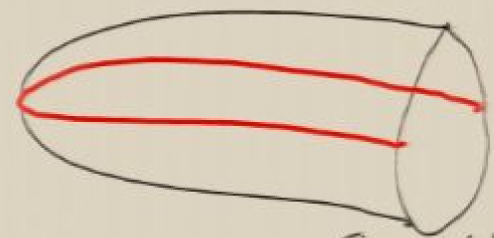

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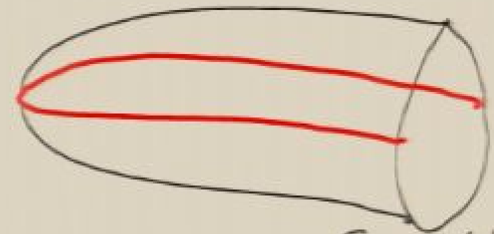

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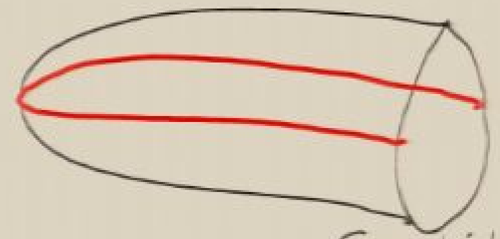

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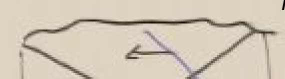

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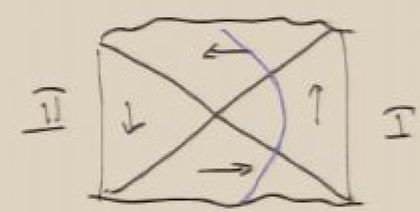

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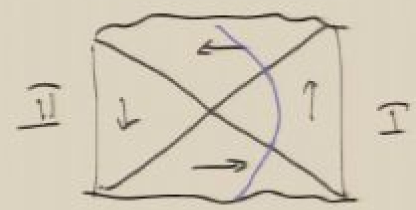

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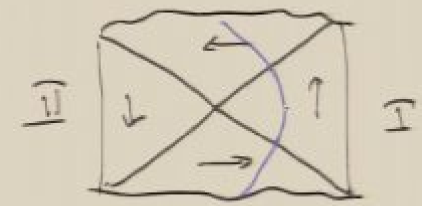

The part of D-brane behind horizon is then excitation of the "ghosts" of region II, or the thermal doublers. Absence of positivity properties is natural in full real time field theory.

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This suggests the dual to black hole ought to include such ghost-like excitations, this vibes with other suggestions:

- Sen: large number of particle-hole excitations (holes = ghost branes...)
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