Some references

Here are a few references for my lectures. If you are interested in specific details, you can probably find the relevant reference in one of these papers, and of course you are always welcome to send me an email.

The first part of the lecture on holographic renormalization was heavily based on [1]. The extension of holographic renormalization to the Lorentzian signature case is for example discussed in detail in the recent paper [2]. The first example of a time-dependent background which asymptotes to AdS but had a big bang/crunch singularity is described in [3,4], with [5] containing a nice introduction to multi-trace deformations in AdS/CFT. The second example, the collapsing shell, is described in [6].

For the second part (the thermodynamic nature of gravity) the AdS Schwarschild black hole, and the relation between LLM geometries, Young diagrams, typical states and coarse graining can be found in [7] and references therein. The extension to AdS_3 is described in [8, 9] and references therein, which includes references to reviews of the "Mathur program" etc.

References

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[4] T. Hertog and G. T. Horowitz, "Holographic description of AdS cosmologies," JHEP **0504**, 005 (2005) [arXiv:hep-th/0503071].

[5] A. Sever and A. Shomer, "A note on multi-trace deformations and AdS/CFT," JHEP **0207**, 027 (2002) [arXiv:hep-th/0203168].

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[7] V. Balasubramanian, J. de Boer, V. Jejjala and J. Simon, "The library of Babel: On the origin of gravitational thermodynamics," JHEP **0512**, 006 (2005) [arXiv:hep-th/0508023].

[8] L. F. Alday, J. de Boer and I. Messamah, "The gravitational description of coarse grained microstates," arXiv:hep-th/0607222.

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