Some thoughts on where we are

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MIT

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Should we go our separate ways?

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- It is almost like one of those jokes: what do a bootstrapper, a geometer, and an entangler all have in common?
 One answer is that they all come to the strings conference!

In recent years this interconnectedness has extended well beyond traditional "high-energy physics".

• The rapid progress on non-susy boson-fermion dualities in 2 + 1 dimensions (see Benini, Seiberg, Komargodski) has developed in parallel with a large body of work by condensed matter theorists studying topological phases of interesting materials, in some cases resolving puzzles in the literature which were decades old.

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All of these developments came at least in part out of attempts to understand quantum gravity and black holes in AdS!

I do not however want this talk to degenerate into unqualified self-celebration.

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Personally, I think that cosmology gives us the best hope: it is only there that we can look for a dynamical explanation of the low-energy effective field theory we see around us, and most of my work is ultimately aimed in this direction.

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In this paper, Maxwell used theoretical consistency to argue that the rings of Saturn must be made out of small individually-orbiting objects, a prediction which was not decisively confirmed until the size distribution of the ring consituents was measured by the Voyager 1 mission in 1980. "There are some questions in Astronomy to which we are attracted rather on account of their peculiarity, as the possible illustration of some unknown principle, than from any direct advantage which their solution would afford to mankind. "There are some questions in Astronomy to which we are attracted rather on account of their peculiarity, as the possible illustration of some unknown principle, than from any direct advantage which their solution would afford to mankind. I am not aware that any practical use has been made of Saturn's rings, either in Astronomy or in Navigation. They are too distant, and too insignificant in mass, to produce any effect on the motion of the other parts of the Solar system; and for this very reason it is difficult to determine those elements of their motion which we obtain so accurately in the case of bodies of greater mechanical importance.

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ありがとうございました