

# A 2nd note on anisotropic quantum gravity

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## Abstract

In a previous paper, we introduced a model that accounts for both dark matter and dark energy. In this paper we will attempt to refute objections to the model.

## 1 Cold dark matter from a graviton condensate

We assume that a lone graviton propagates at the speed of light. That is, without any *relaying*, the graviton travels at the speed of light.

One objection to the model introduced in [1] is that dark matter must be cold. In other words, the dark matter must have a speed less than the speed of light.

It is easy to see that once the gravitational degrees of freedom are aligned, that there will be graviton-graviton interaction – gravitons relaying other gravitons. This relaying only slows the graviton down, making it cold. As the spatial dimension of the gravitationally bound system drops from 3 down to 2, then down to 1, the slower the gravitons.

This model is experimentally testable: there will be no gravitational shadow behind a mass, but there will be lag – the gravitons travel slower than the speed of light when being relayed by a mass.

Thanks to W. for their objection.

## References

- [1] Halayka. A note on anisotropic quantum gravity.  
TechRxiv. Preprint – <https://doi.org/10.36227/techrxiv.20326470.v5>

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