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I don't know, are you sure you want to do this?

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Abstract. ...

1. Introduction

2. Sea level projections (PG)

2.1. Global sea level

2.2. Local sea level

2.3. Uncertainty assessment

2.4. Limitations of the sea level projections

3. Decision tools (KdB, MD, TT)

3.1. Timing of adaptation measures

We consider adaptation decision making related to the timing of proactive adaptation measures. That is, the goal is to adapt to sea level rise before major damages occur. In a cost-benefit framework, an investment should be delayed as long as the benefits of delay (avoided investment costs) are greater than the associated costs (higher climate change damages) [*Fankhauser et al.*, 1999].

Fankhauser et al. [1999] describe a deterministic framework where an adaptation investment of C^0 now (at time $n = 0$) leads to unmitigated damage of d_0^0 in period 0, and a stream of partially mitigated damages d_t^0 in periods $t = 1, 2, \ldots$. If r is the discount rate, the net present value damage, D^0, associated with this investment is

$$D^0 = C^0 + d_0^0 + \frac{d_1^0}{1+r} + \frac{d_2^0}{(1+r)^2} + \cdots \quad (1)$$

In comparison, postponing the adaptation investment to time period $n = 1$ would lead to unmitigated damages in periods 0 and 1, and partially mitigated damages, d_t^1, thereafter.

The delay would be preferable if

$$C^0 - \frac{C^1}{(1+r)} > (d_0^1 - d_0^0) + \frac{d_1^1 - d_1^0}{1+r} + \frac{d_2^1 - d_2^0}{(1+r)^2} + \cdots$$

Here, the expression on the left describes the benefits of the delay while the expression on the right describes the cost of the delay. In the simplest case, there is no change in investment costs ($C^0 = C^1 = C$) and the delay has no lasting effects beyond period 1 ($d_t^1 = d_t^0$ for $t > 1$). In this case, the comparison is between the expected return r earned on the captial while implementation is delayed and one addtional time period of unmitigated damage,

$$rC > d_1^1 - d_1^0.$$

3.2. Limitations of the decision framework

4. Case studies

4.1. Data (PG)

4.2. Timing of adaptation measures (KdB, TT)

A case study focusing on and comparing different cities in Norway.

4.3. Selection of adaptation measures(?) (MD)

A case study focusing on Denmark.

5. Conclusions

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Extremes in Large Datasets" (ClimateXL). The source code for the analysis is implemented in the statistical programming language `R` (`http://www.R-project.org`) and is available on GitHub at `http://github.com/eSACP/...`.

References

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