



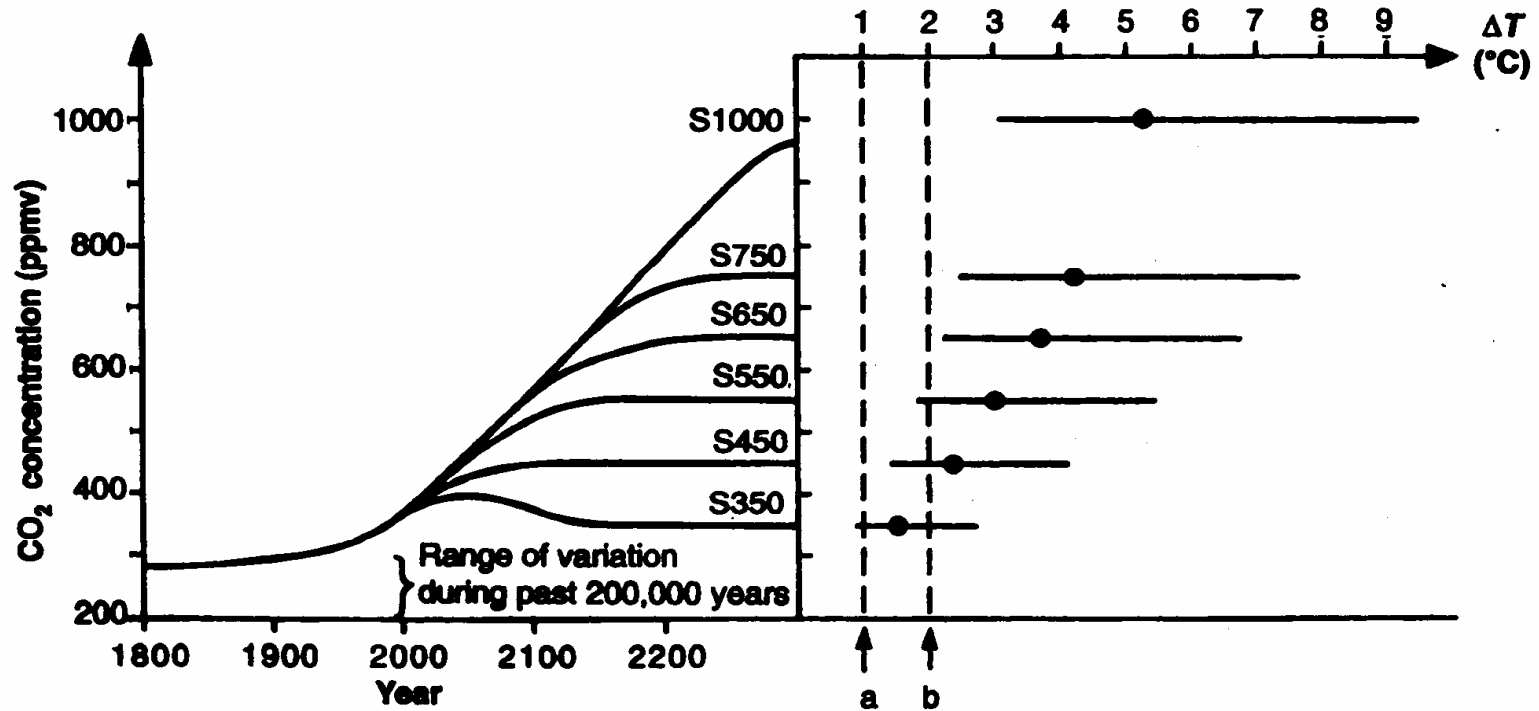
The cost of climate action and inaction

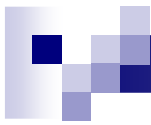
Fredrik Hedenus

Physical resource theory

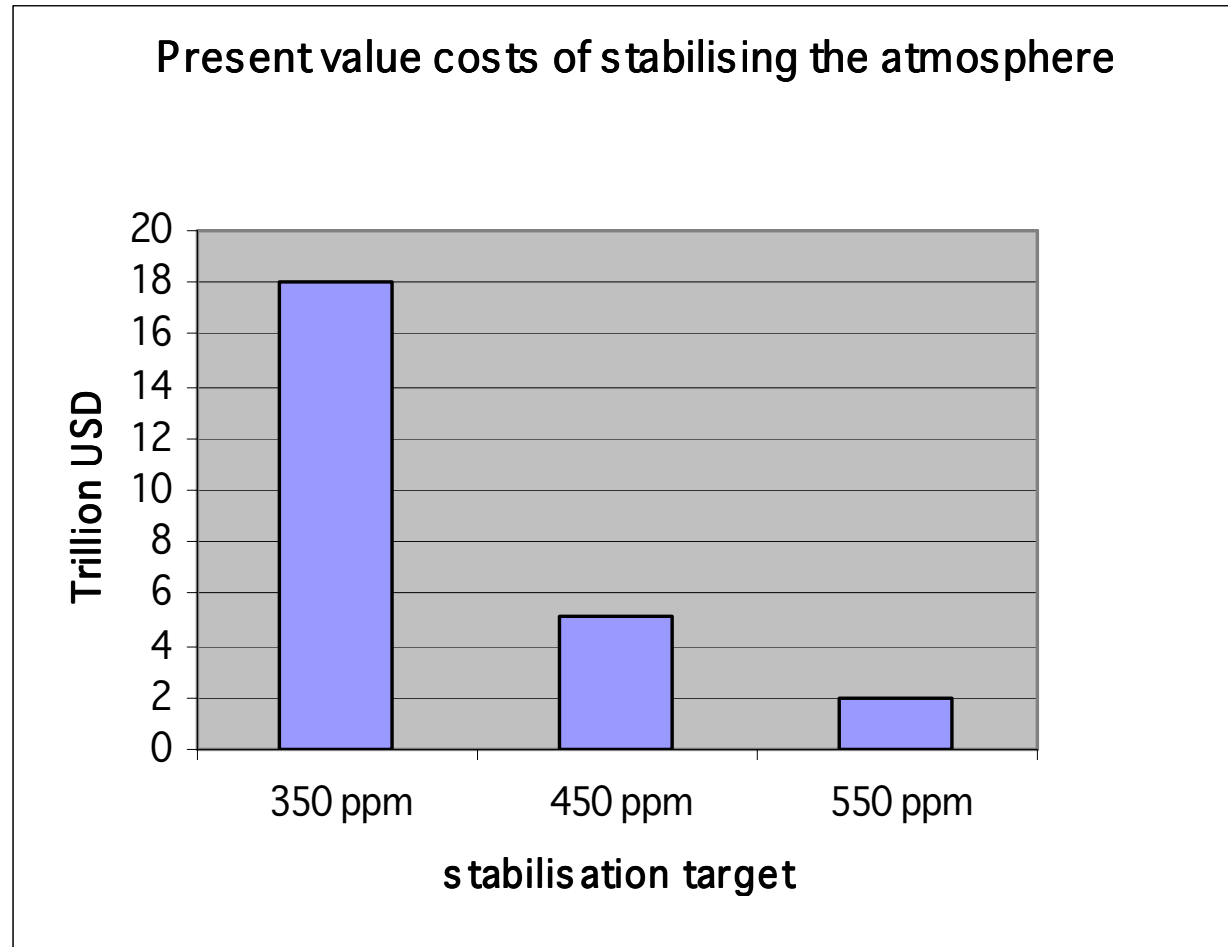
Chalmers University of Technology

Climate targets

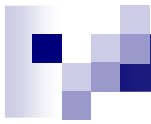




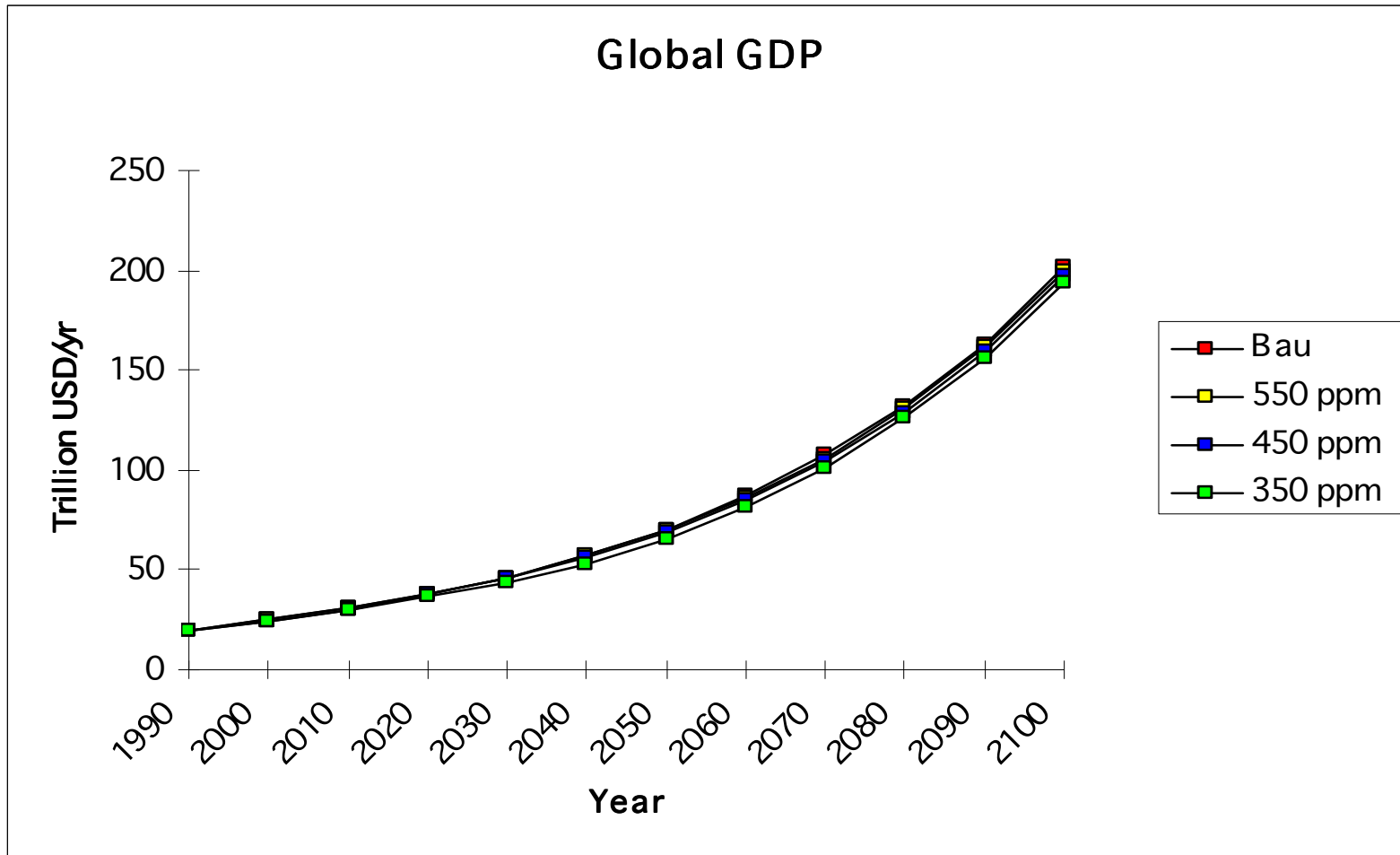
Cost of climate action



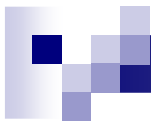
Source Azar & Schneider, 2002. Ecological Economics



Global GDP under climate policy

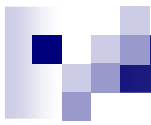


Source Azar & Schneider, 2002. Ecological Economics



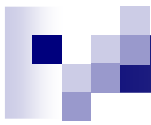
Costs of inaction

- Loss of human lives and health
- Displacement of people
- Loss of biodiversity and ecosystems
- Changed yields
- Loss of capital



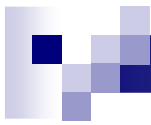
Cost-Benefit analysis

- Monetarisation of all costs and benefits
- Aggregation of all costs and benefits
- Weights costs of mitigation and adaptation to benefits of avoided climate change



Typical result

- We do not have to do very much about climate change...
 - carbon price of 3-8 €/ton ton CO₂
 - The ETS price today is 16 €/ton ton CO₂



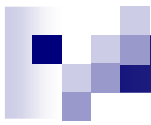
Value of lives

- Climate changes leads to the death of 100 000 people in a poor country.
- It would cost 1% of US GDP to avoid the emissions that leads to these deaths (around 100 GUSD)
- Each life is valued at 100 000 USD, gives a total benefit of 10 GUSD
- The value of lives in the EU is estimated to 1 500 000 USD. What if these lives where threatened



Ecological damages

- Value of nature
 - User value
 - Existence value
 - Value in the future?
- Value independent of humans?
 - Ecosystems
 - Individual animals



Conclusion

- The costs of action is small compared to expected growth
- The costs of inaction are very hard to assess.