

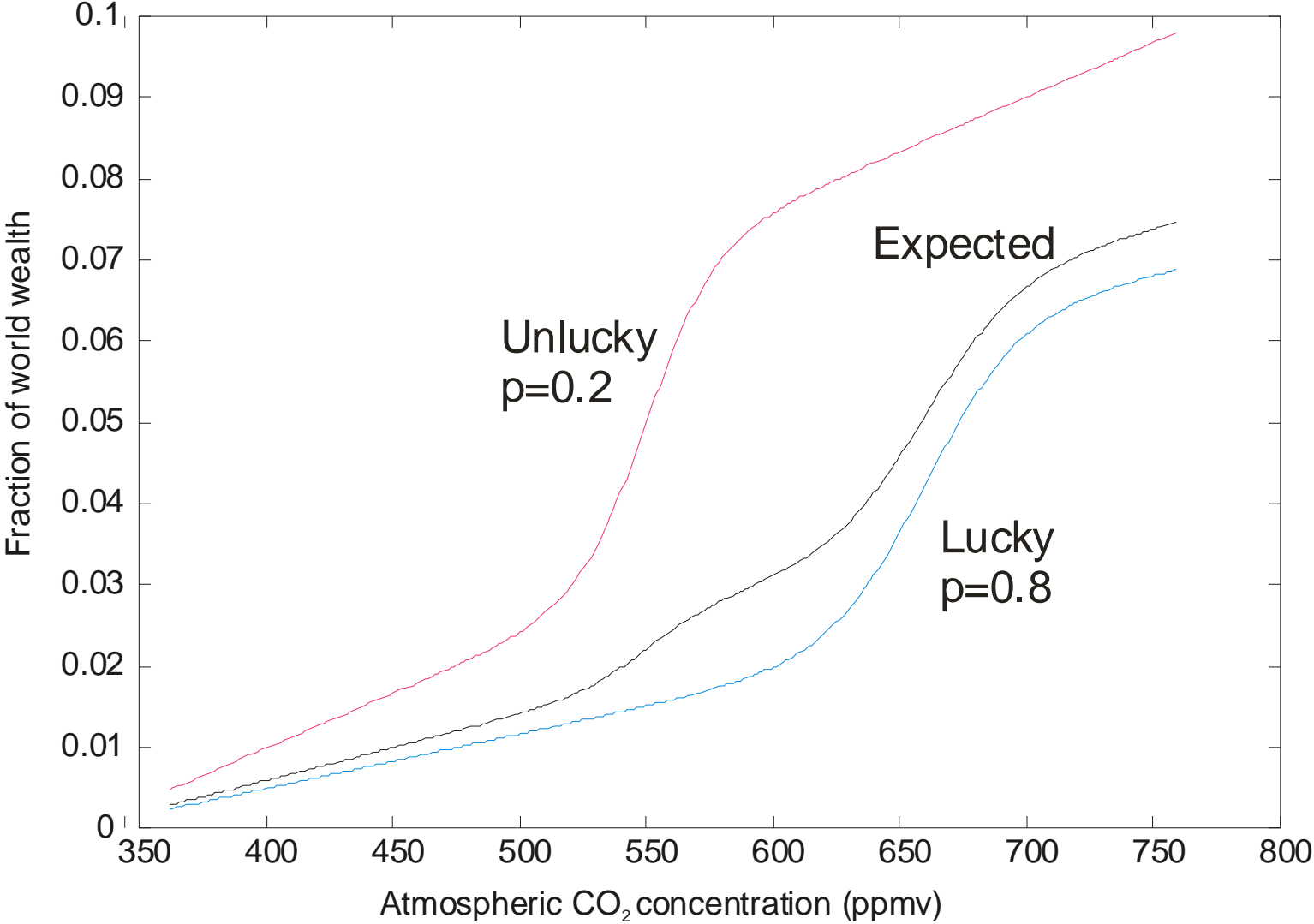
Air Capture: Implications for Climate Policy

DIAM

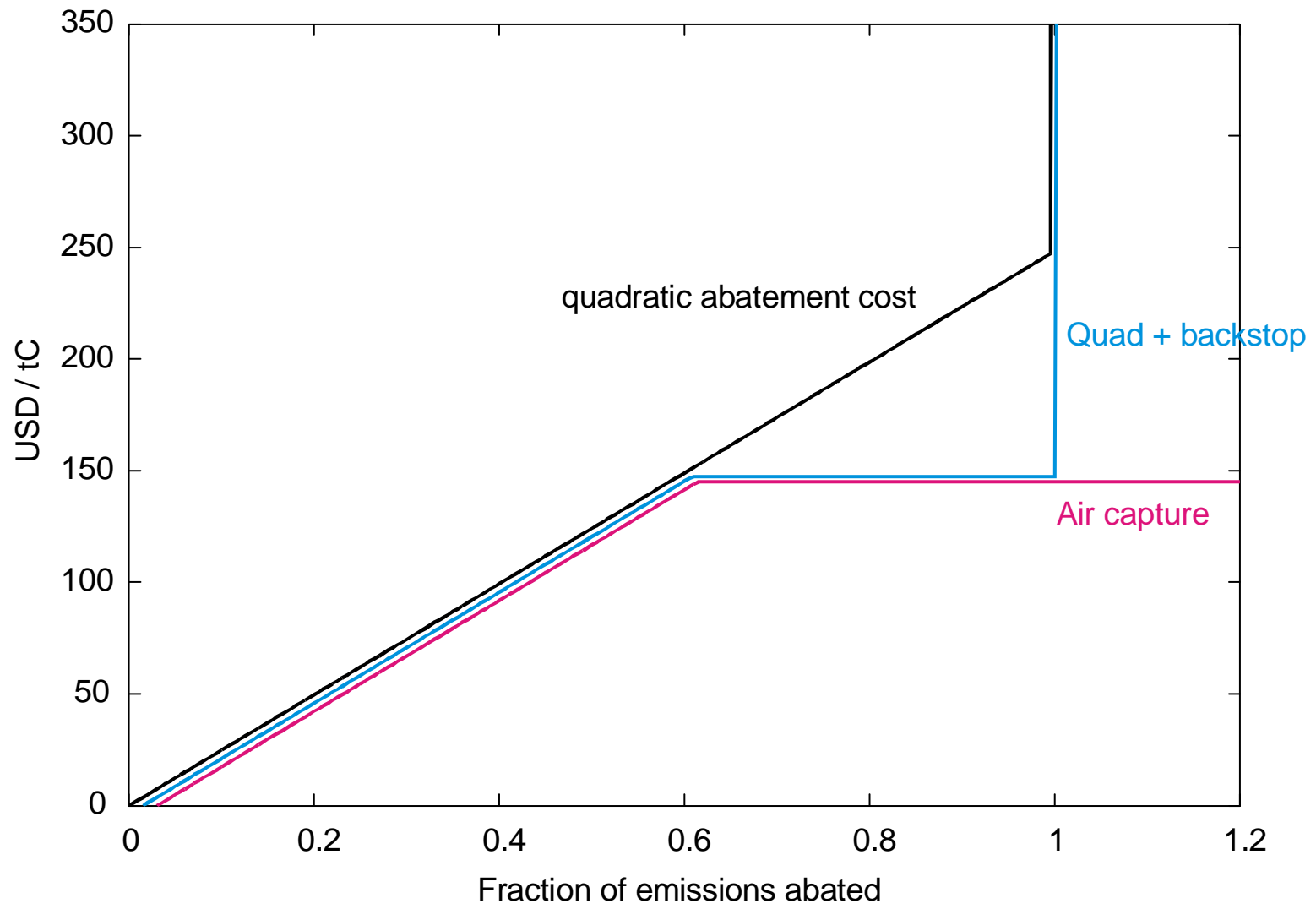
DIAM:

- Maximizes discounted inter-temporal sum of global utility under uncertainty
- Not a growth model: Costs and emissions specified WRT a reference scenario
- Simple parameterization of endogenous technological change: abatement costs scale with rate deployment of abatement technologies
- Non-linear damage functions with threshold.

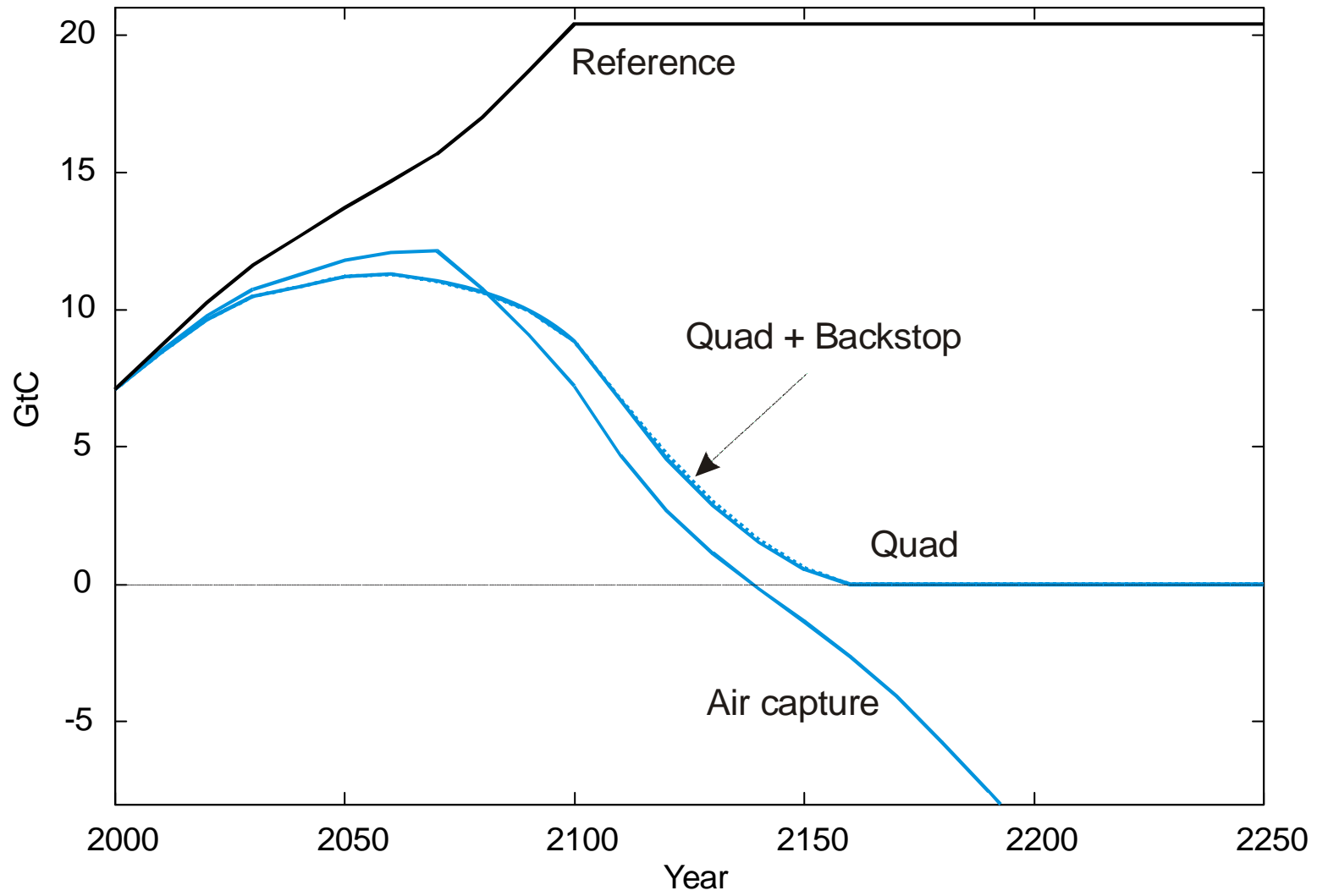
Cost of climate impacts: damage functions



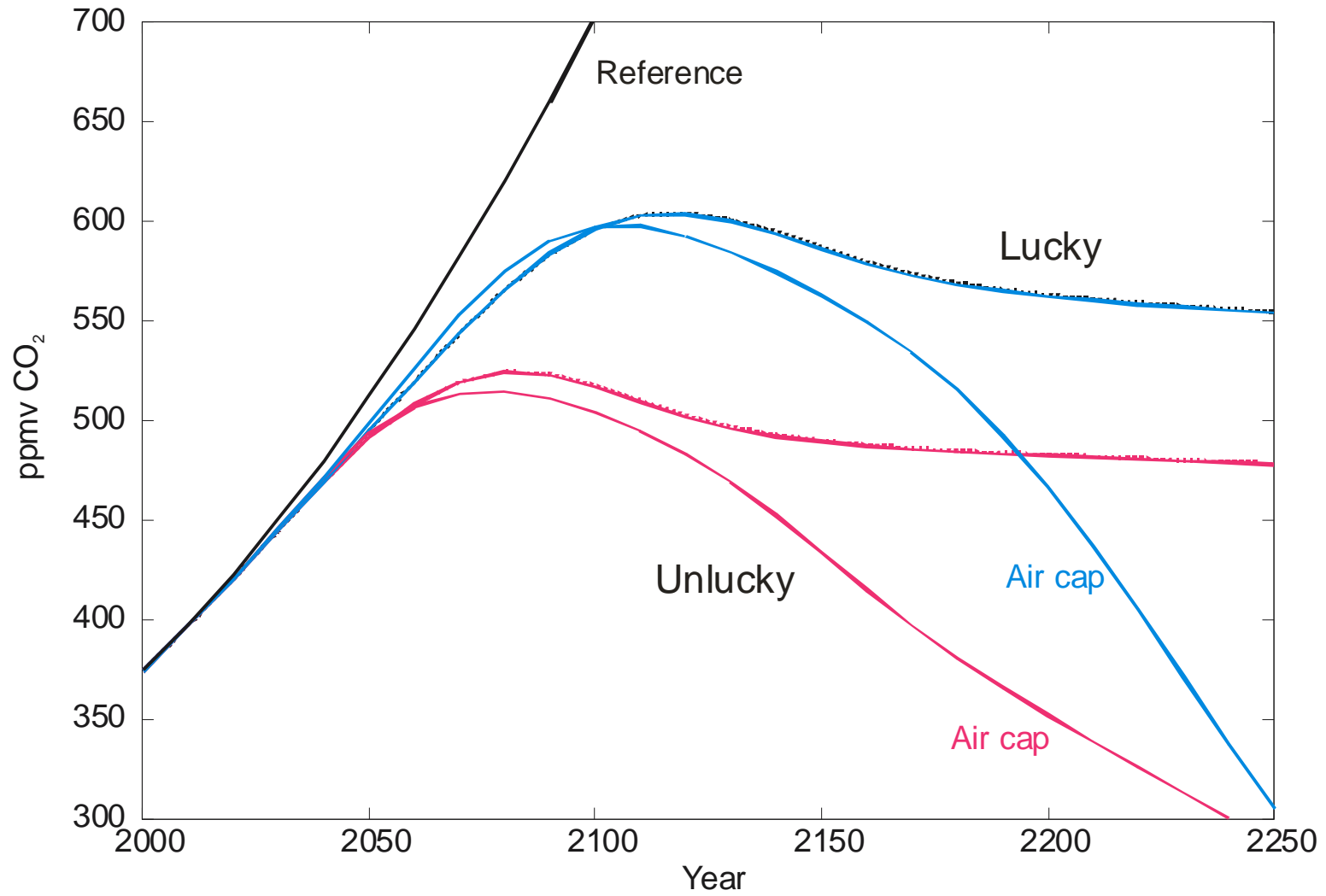
Abatement costs



Emissions



Concentrations



Air Capture: Implications

Air capture can fundamentally alter the temporal dynamics of global warming mitigation.

1. It removes emissions from any part of the economy with equal ease or difficulty → its price caps the cost of mitigation across the economy.
2. It allows the removal of CO₂ after emission → it permits reduction in concentrations more quickly than can be achieved by the natural carbon cycle. Net emissions can be negative.
3. It is decoupled from the rest of the energy system → its returns-to-scale may be better than for more conventional technologies.