Reflect solar radiation?
To reduce atmospheric warming
Radiation Management

Reduce greenhouse gas emissions...
Adapt to the effects of climate change...
Intervene in the climate system...

Remove CO₂ from the air?
To reduce the greenhouse effect
Carbon Dioxide Removal

Mitigation!

Adaptation!

Risks and unresolved questions
- Can it be ethically justified?
- Who pays? Who profits?
- Who negotiates? Who decides? Who is liable?
- Climate effects and environmental risks?
- How can decisions be made?

Erect artificial trees
CO₂ from the air could be chemically bound and stored or used as a resource

Afforestation / biochar production
Trees could photosynthetically bind CO₂, which could be sequestered long-term as biochar

Ocean fertilization
Algal blooms could absorb large quantities of CO₂, which would sink to the bottom of the sea when the algae die off

Increase the albedo of earth’s surface
Mirrors or artificially lightened surfaces could reflect solar radiation

Inject aerosols into the stratosphere
Sulphur particles could generate reflective atmospheric particles

Increase cloud formation over the ocean
Spraying sea water over the ocean could promote the formation of reflective clouds

Overview of selected Climate Engineering approaches (Source: German Federal Ministry of Education and Research)