IAM modelers' questions, challenges, priorities

Discussion topics

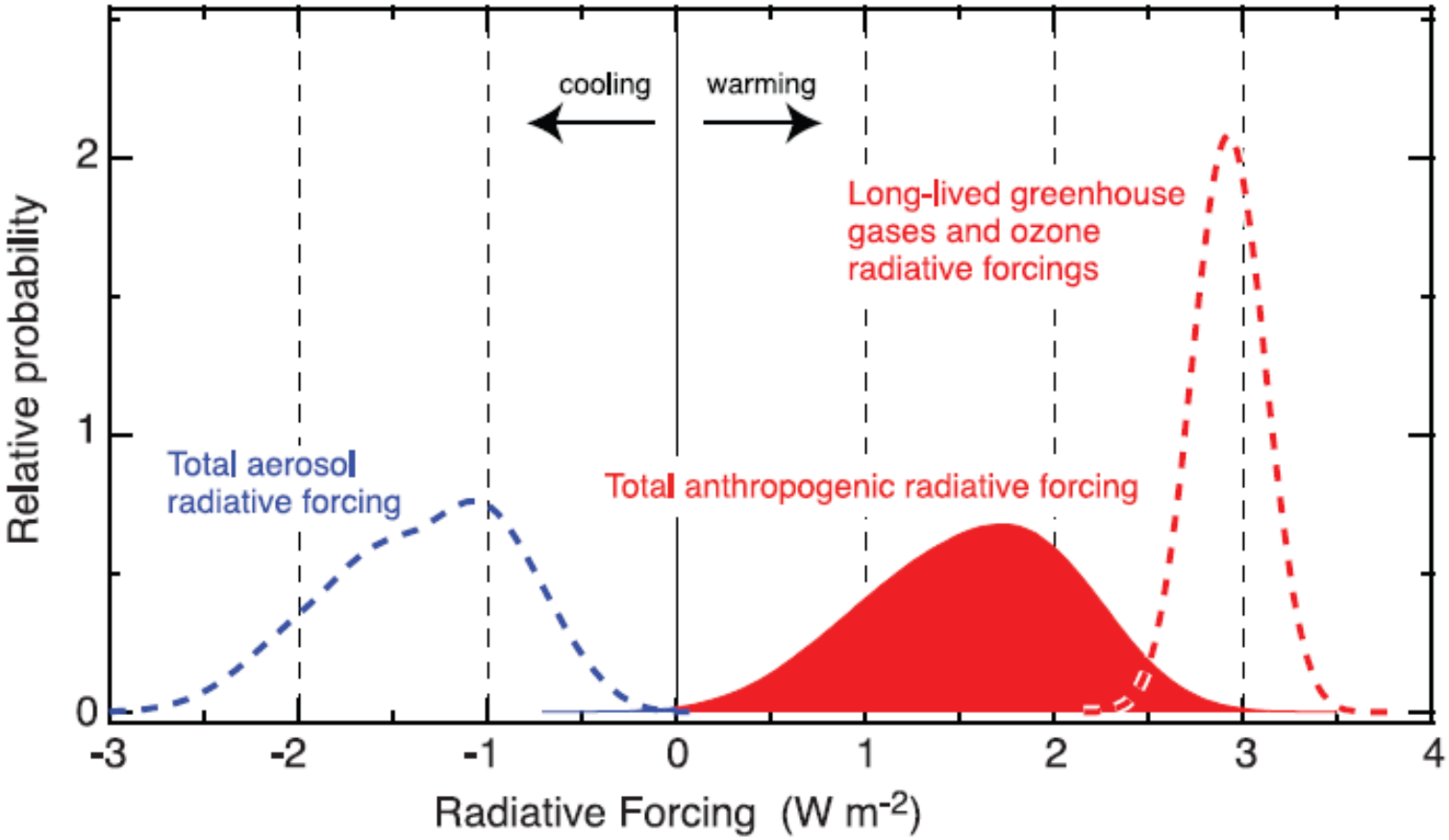
What could we do now? Medium term? Long term?

- Improving forcing modeling?
- Improving GMST modeling?
- Regional climate responses?
- Emissions modeling?
- Air pollution policy?

Principles

- What is reasonable for aggregate modeling?
  - Virtue in parsimony
  - Avoid bias
- What will have first order implications?
- Taking advantage of current knowledge
- Means and uncertainty

Aerosol forcing uncertainty



Topics identified thus far

- **Emissions and drivers**
  - Importance of tracking detailed sources
  - Activity drivers by source
  - Air pollution control assumptions and formulation
- **Chemistry and climate**
  - Emissions to forcing translation
  - Emissions source forcing differences
  - Individual emissions contributions vs. interactions
  - Functional forms
  - Regionality needed
  - Sign of cloud indirect forcing w/ emissions reduction
  - Cloud albedo & cloud cover indirect forcing
- **Uncertainty – historical and future**

Additional topics

- Emissions modeling granularity needed? Spatial, sectoral, temporal, height
- Efficacy
- IAM modeling of CH4
- Additional sources for guidance for reduced form aerosol & ozone emissions to forcing modeling?
- How will AR5 be useful to updating/improving modeling?
- Are best estimates meaningful?
- Bounding emissions futures
- Air pollution policy futures
- Non-mainstream items – e.g., super-emitters, deposition, precipitation effects
- Consideration of pollutants in climate policy
- Focus on subset of species?
- Relative importance of various uncertainties?