Climate Intervention Research in an Earth Systems Science Framework: Setting priorities to generate policy-relevant knowledge

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Session 1: Cross Cutting Issues, Needs and Opportunities

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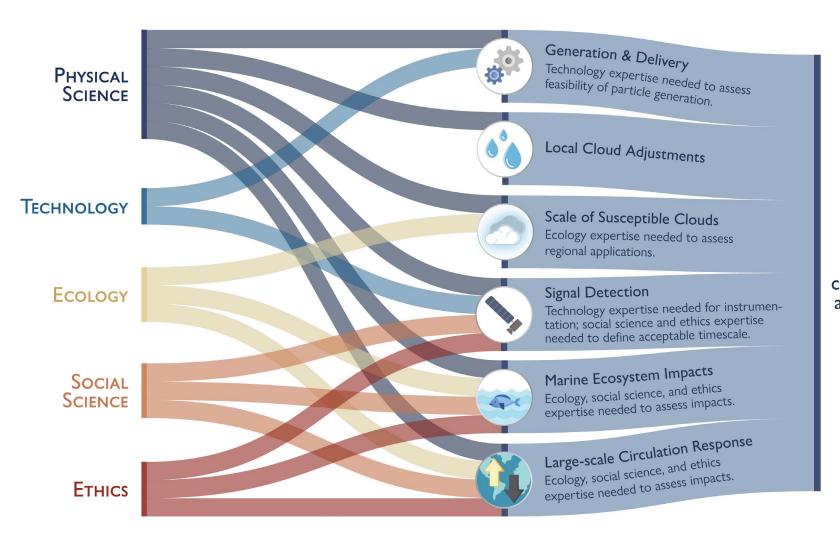


Large-scale Circulation Response Exit if risks of unfavorable cloud, temperature, or precipitation changes from heterogeneous brightening outweigh those from unmitigated warming. Diamond et al. (2022), PNAS doi:10.1073/pnas.2118379119

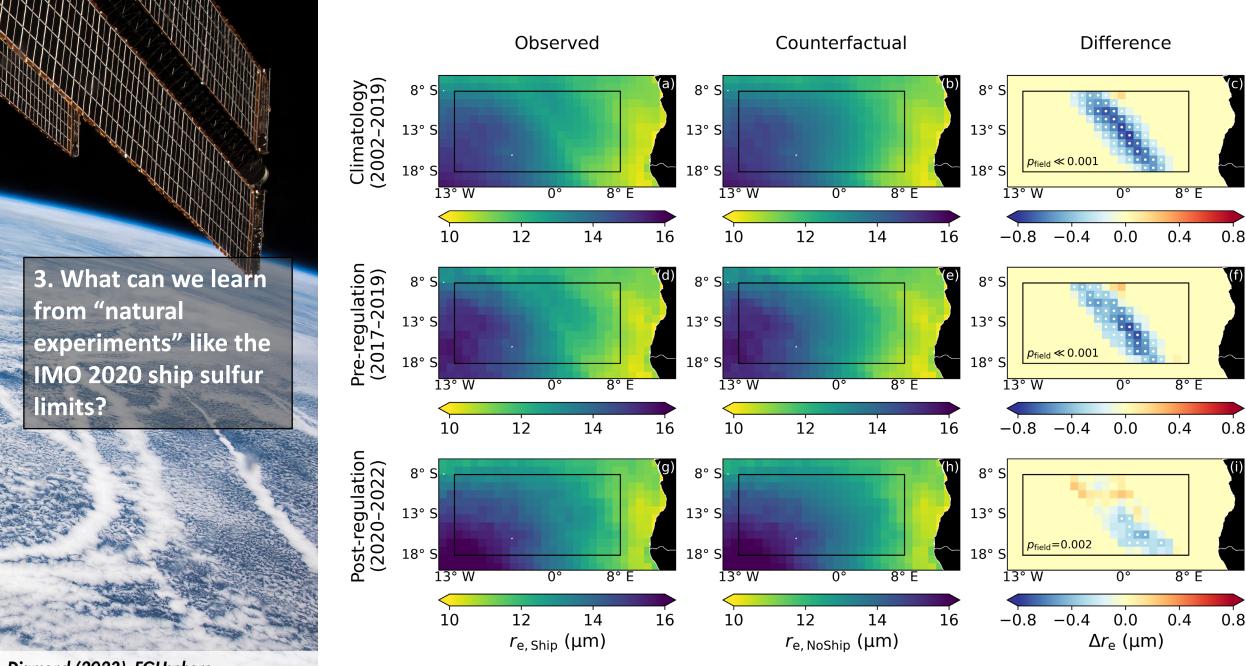
PHYSICAL SCIENCE CHECKPOINTS IN MARINE CLOUD BRIGHTENING RESEARCH Current state of scientific knowledge about MCB **Generation & Delivery** Exit if infeasible to generate and deliver particles of the Continual reassessment of checkpoints proper size. **Local Cloud Adjustments** Exit if reductions in cloud water substantially offset microphysical brightening. Scale of Susceptible Clouds Exit if clouds susceptible to brightening do not consistently occur at the necessary regional or global scales. **Signal Detection** Exit if changes would not be detectable from space within a timeframe that would allow for changes in response to new conditions or concerns. **Marine Ecosystem Impacts** Exit if risks to coastal communities and to marine ecosystems and chemical cycles outweigh those from unmitigated warming. Dissemination of Policy-Relevant Knowledge



Diamond et al. (2022), PNAS doi:10.1073/pnas.2118379119



Technical feasibility checkpoints assessment



Diamond (2023), EGUsphere doi:10.5194/egusphere-2023-971



Lenferna et al. (2017), Earth's Future doi:10.1002/2016EF000504

