Geophysical Research Abstracts
Vol. 18, EGU2016-8767, 2016
EGU General Assembly 2016

Effects on the ocean carbon cycle from solar radiation management types of geoengineering

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Climate engineering is often brought up in the climate mitigation and adaptation discussions. Such action can be viewed as an additional method for reducing the impacts of global warming. However, much more research is required in order to assess both the feasibility and the safety of such methods. We present results from the Norwegian Earth System model (NorESM) for a future RCP8.5 scenario where solar radiation management in the form of stratospheric sulfur injection has been performed in order to limit the global warming. Since the CO_2 emissions continue in this future, the impact climate engineering has on the global and regional ocean carbon sink is a key part of this research. We show that while global surface acidification is not significantly enhanced under climate engineering, there are significant changes in the ocean carbon cycle driven by changes in circulation and stratification, and changes in biological production.