

The SPARC Dynamics and Variability Project: Connections to the C20C Project

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Several lines of evidences suggest that the stratospheric state exerts a significant influence on the tropospheric circulation. As global climate models, which typically represent the stratosphere poorly, become increasingly comprehensive, important questions arise: How does a poor representation of the stratosphere degrade the simulation of tropospheric circulation in climate models? Furthermore, how does stratospheric representation affect the simulated circulation response to climate change? To address these questions the WCRP SPARC group recently initiated the SPARC Dynamics and Variability Project, which will set up a mode intercomparison to explore the dynamical coupling between the stratosphere and the troposphere. The project aims to compare in detail the climatology and variability of standard "low-top" climate models and stratosphere-resolving "hi-top" climate models. Among our plans is to compare C20C simulations for high-top and low-top models. Given that some groups within the C20C Project are already planning to carry out such integrations, we will argue that it could be very beneficial to both groups if the two projects were linked.