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Importance of the stratosphere for extended-range prediction

Monday, 18 November 2019 13:30 (45 minutes)

Over the past 20 years the notion that the stratosphere is intimately involved in tropospheric predictability has evolved from fanciful hypothesis to established fact. The physical timescales are such that the stratosphere can provide a source of internal atmospheric predictability on subseasonal to seasonal timescales, and many studies have shown that the impact on the troposphere can be of first-order importance. Current scientific questions now revolve around identifying the relevant physical mechanisms, improving the representation of the stratosphere (and of stratosphere-troposphere coupling) in atmospheric models, and understanding how deficiencies in the models affect the predictions. The benefits of this work reach beyond extended-range prediction to decadal prediction and climate change, as they help interpret the role of the stratosphere in those applications by providing a more causal, process-oriented perspective. This talk will give an overview of the results from the ECMWF Stratosphere Task Force and a perspective on opportunities for further progress in this area.

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