



## COLLOQUIUM

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4pm Workman 101

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### **The tornadoes of 30–31 May 2019 in south-Central Chile: Sensitivity to topography and SST**

Tornadoes were reported in south-central Chile on 30 and 31 May 2019. To better understand the mechanisms that supported the organization and severity of the storms that generated them, a series of high-resolution sensitivity simulations were conducted using the Weather Research and Forecast (WRF) model. Our results indicate that on 30–31 May 2019, flow blocking by the Andes topography generated mesoscale wind shear conditions that favored tornado formation. Our results also suggest that Sea Surface Temperature (SSTs) has an impact storm severity via an influence on atmospheric instability. However, when these two factors were combined, warmer SSTs was not able to overcome a reduction in wind shear associated with a decrease in the topography. This suggests that in south-central Chile, wind shear is more important than Convective Available Potential Energy (CAPE) for tornado generation, as has been found for other regions around the world.