

Impact of the February 2018 Major Stratospheric Sudden Warming on Global Ozone

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A major stratospheric sudden warming (SSW) occurred in February 2018. This was a wave-2 SSW that split the stratospheric polar vortex. The magnitude of the eddy forcing of the event was possibly the largest observed in the satellite data era (1980-present). This SSW warmed the Arctic, reversed the normal westerly winds to easterlies, and dramatically increased total column ozone levels in the Arctic. In addition to the polar effects, this SSW had a major impact on trace gas distributions in the mid-latitudes and tropics. In this presentation we characterize the 2017-18 winter state, show the SSW evolution, the context of this SSW against the SSW climate record, and show its dynamical impact across the northern hemisphere and tropics. In particular, we also analyze the SSW's impact on trace gas distributions.