



# *Ice nucleation in the wake of warm hydrometeors*

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The formation of ice in mixed-phase clouds greatly impacts Earth's hydrologic cycle. The intensity, distribution, and frequency of precipitation as well as radiative properties of clouds in the mid-latitudes are strongly influenced by the number concentration of ice particles. A long-standing riddle in cold clouds is the frequent observation of measured ice particle concentrations several orders of magnitude higher than measured ice-nucleating particle concentrations. Here, we report laboratory observations of copious cloud droplets and ice crystals formed in the wake of a warm, falling water drop. Aerosols were activated in the transient regions of very high supersaturation due to evaporative mixing in the wake. We extend these results to typical mixed-phase atmospheric conditions, and our calculations show that the induced evaporative supersaturation may significantly enhance the activated ice nuclei concentration in the particle's wake.

**\*Wednesday, 20 November 2019, 3:30pm**

Refreshments 3:15 PM

NCAR-Foothills Laboratory, 3450 Mitchell Lane

**\*Please Note Special Day-Wednesday**

**FL2-1022 Large Auditorium**

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