

# ***Interactive comment on “Supercooled Drizzle Development in Response to Semi-Coherent Vertical Velocity Fluctuations Within an Orographic Layer Cloud” by Adam Majewski and Jeffrey R. French***

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I came across this discussion manuscript via the weekly ACP alerts and found it to be very interesting. This manuscript has caught my attention because, in a manuscript of ours that was accepted for publication just last month (doi: 10.1029/2019JD030882), we describe a persistent highly supercooled drizzling event that was detected over McMurdo Station, Antarctica, during the recent AWARE field campaign. The drizzling cloud temperatures in our case study ( $-29\text{ C} < T < -25\text{ C}$ ) were very similar to those reported in this study. I was happy to see that our estimations of the activated droplet

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and ice number concentrations during that event based on LES simulations match the observational values in this study.

My only recommendation for the authors is to modify the Introduction sentence (l. 58-59): "... with few if any observations of SCDD formation found in the literature with cloud tops colder than  $-23\text{ }^{\circ}\text{C}$ .", because there are, additionally, two previous reports mentioning highly supercooled drizzle observations at temperatures lower than  $-23\text{ }^{\circ}\text{C}$ , that is, Lawson et al. (2001; doi:10.1029/2000JD900789;  $T = \sim -25\text{ }^{\circ}\text{C}$ ) and Korolev et al. (2002; Observation of drizzle at temperatures below  $-20\text{ }^{\circ}\text{C}$ . In 40th AIAA Aerospace Sciences Meeting & Exhibit;  $T = \sim -28\text{ }^{\circ}\text{C}$ ).

Thank you, Israel Silber

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