# **Supplementary material**

# Identifying the seeding signature in cloud particles from hydrometeor residuals

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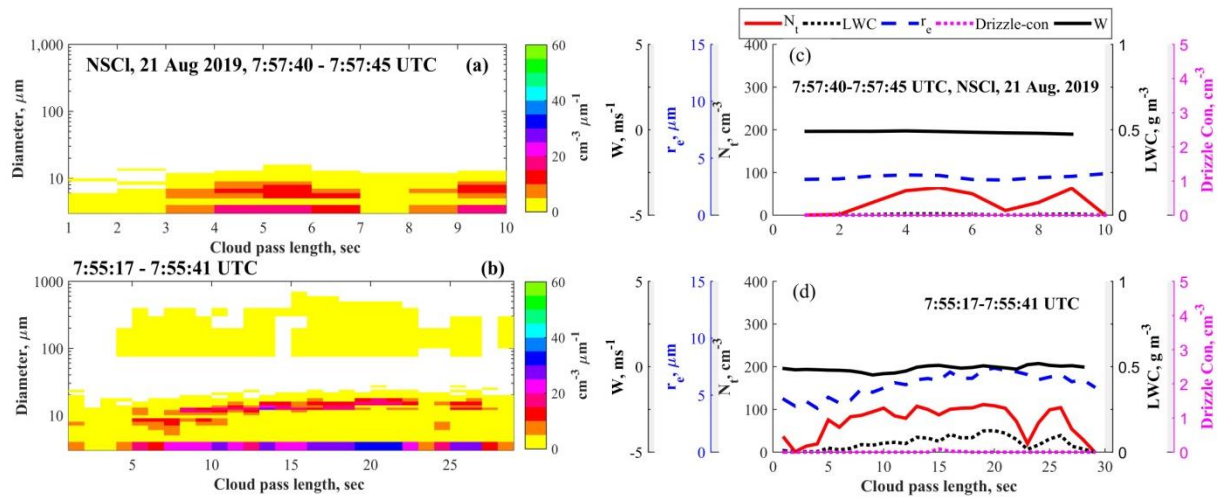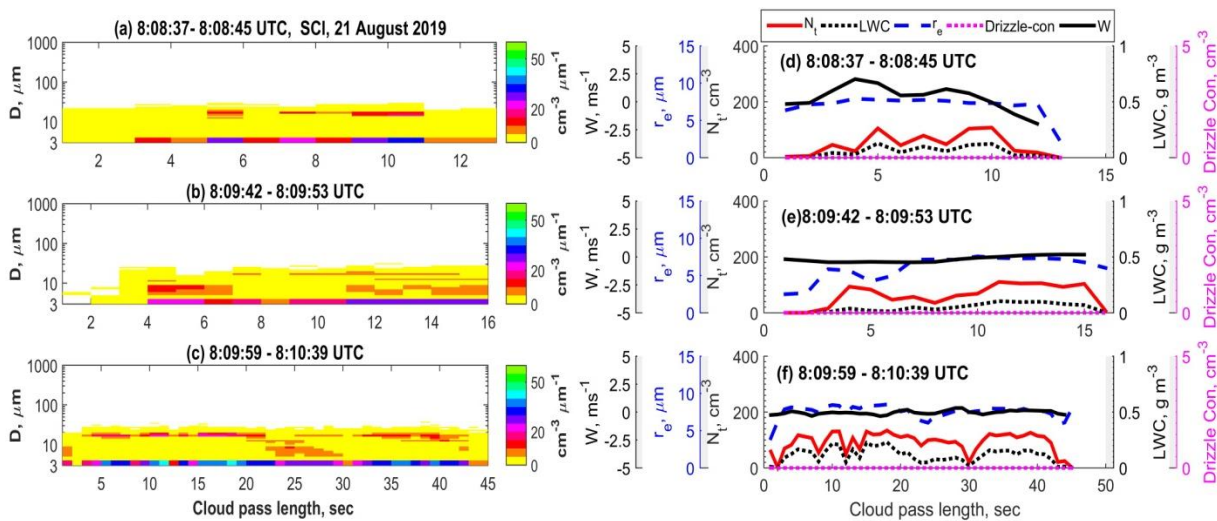**Figure S1**. Drop size distribution for non-seeded cloud (NSCl) on 21 August 2019. The effective radius ($r_e$, μm), vertical velocity (W, $ms^{-1}$), total droplet number concentrations ($N_t$, $cm^{-3}$) in the diameter range 2-50 μm, and drizzle concentration (Drizzle con, $cm^{-3}$) in the diameter range 100-6200 μm, and liquid water content (LWC) are shown for cloud passes.
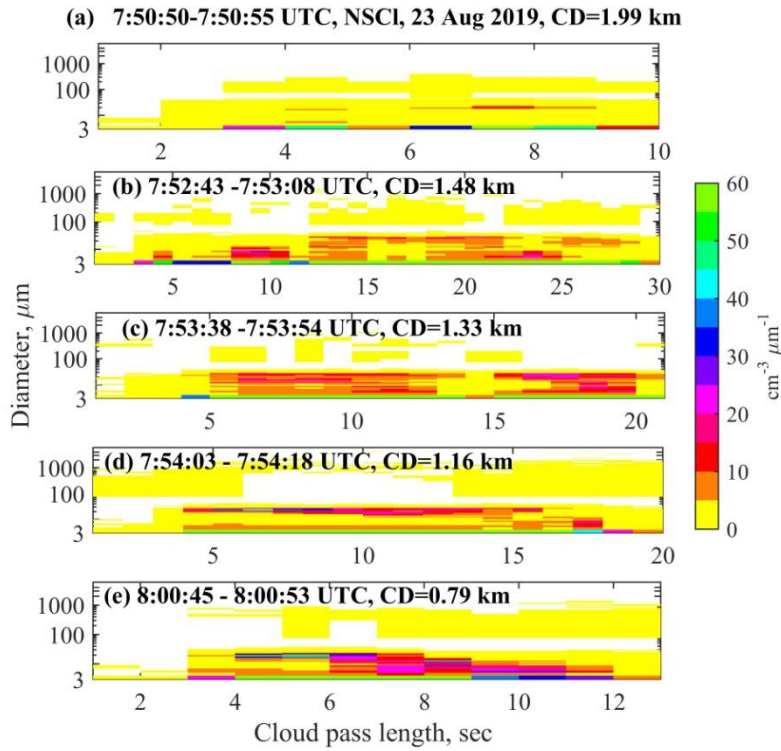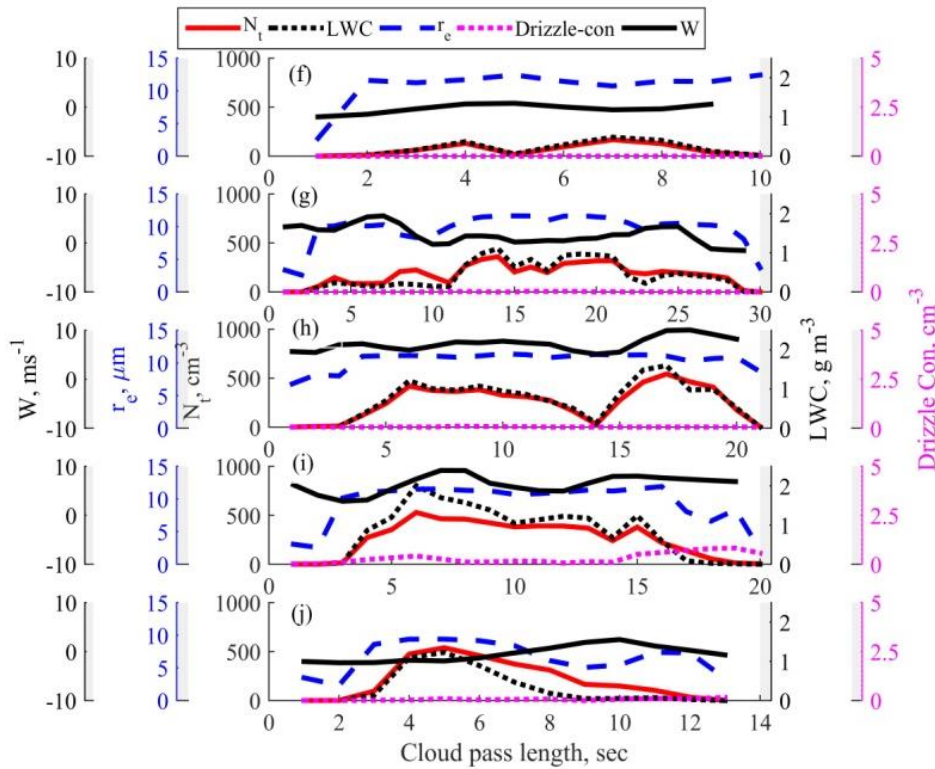


**Figure S2**. Same as Figure S1, but for seeded cloud on 21 August 2019.

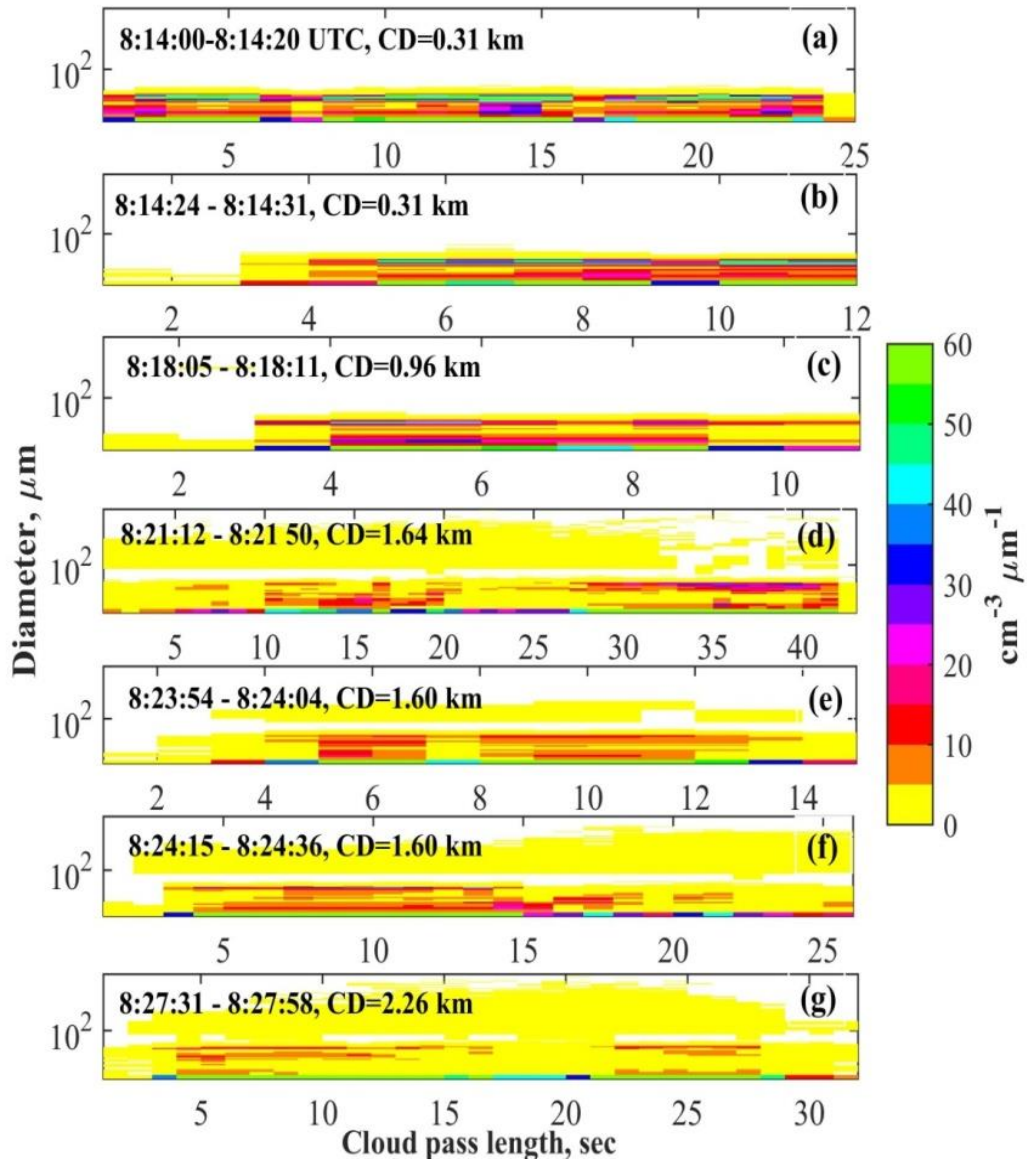**(a)** 7:50:50-7:50:55 UTC, NSCl, 23 Aug 2019, CD=1.99 km

**(b)** 7:52:43 -7:53:08 UTC, CD=1.48 km

**(c)** 7:53:38 -7:53:54 UTC, CD=1.33 km

**(d)** 7:54:03 - 7:54:18 UTC, CD=1.16 km

**(e)** 8:00:45 - 8:00:53 UTC, CD=0.79 km

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37    **Figure S3.** Same as Figure S1 but for NSCl on 23 Aug 2019.

8:14:00-8:14:20 UTC, CD=0.31 km (a)

8:14:24 - 8:14:31, CD=0.31 km (b)

8:18:05 - 8:18:11, CD=0.96 km (c)

8:21:12 - 8:21 50, CD=1.64 km (d)

8:23:54 - 8:24:04, CD=1.60 km (e)

8:24:15 - 8:24:36, CD=1.60 km (f)

8:27:31 - 8:27:58, CD=2.26 km (g)
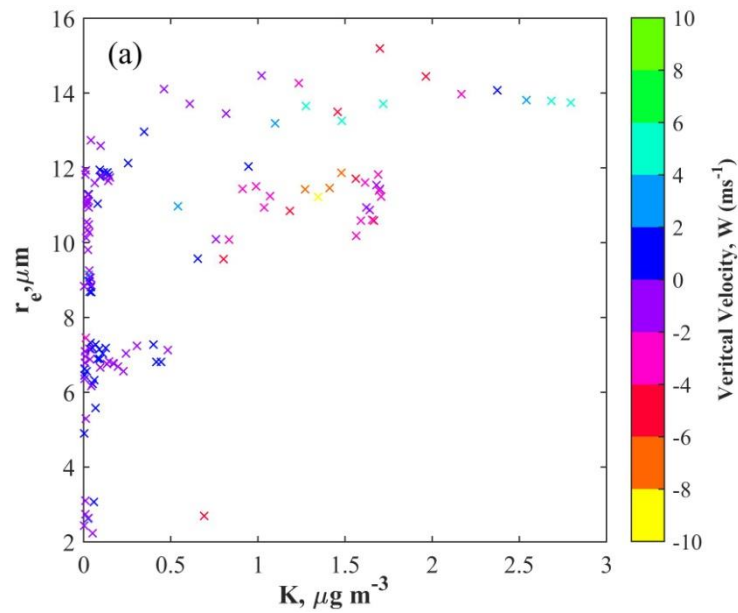
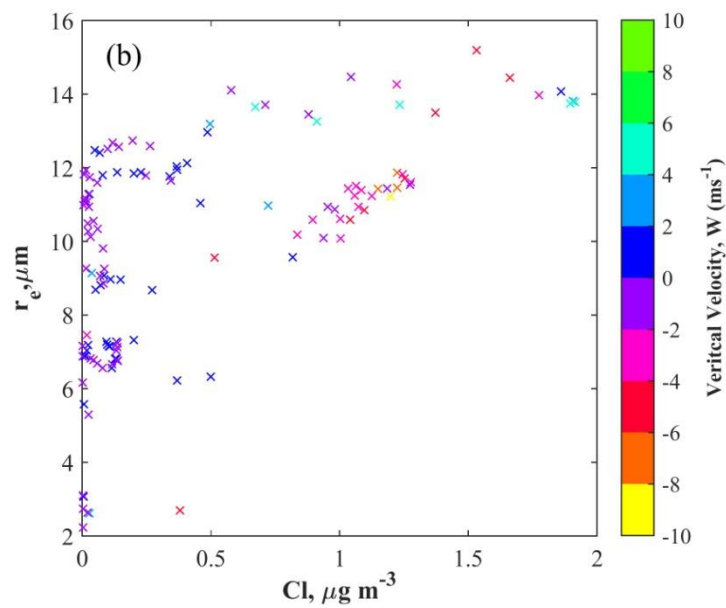Diameter, $\mu m$

Cloud pass length, sec

$cm^{-3} \mu m^{-1}$

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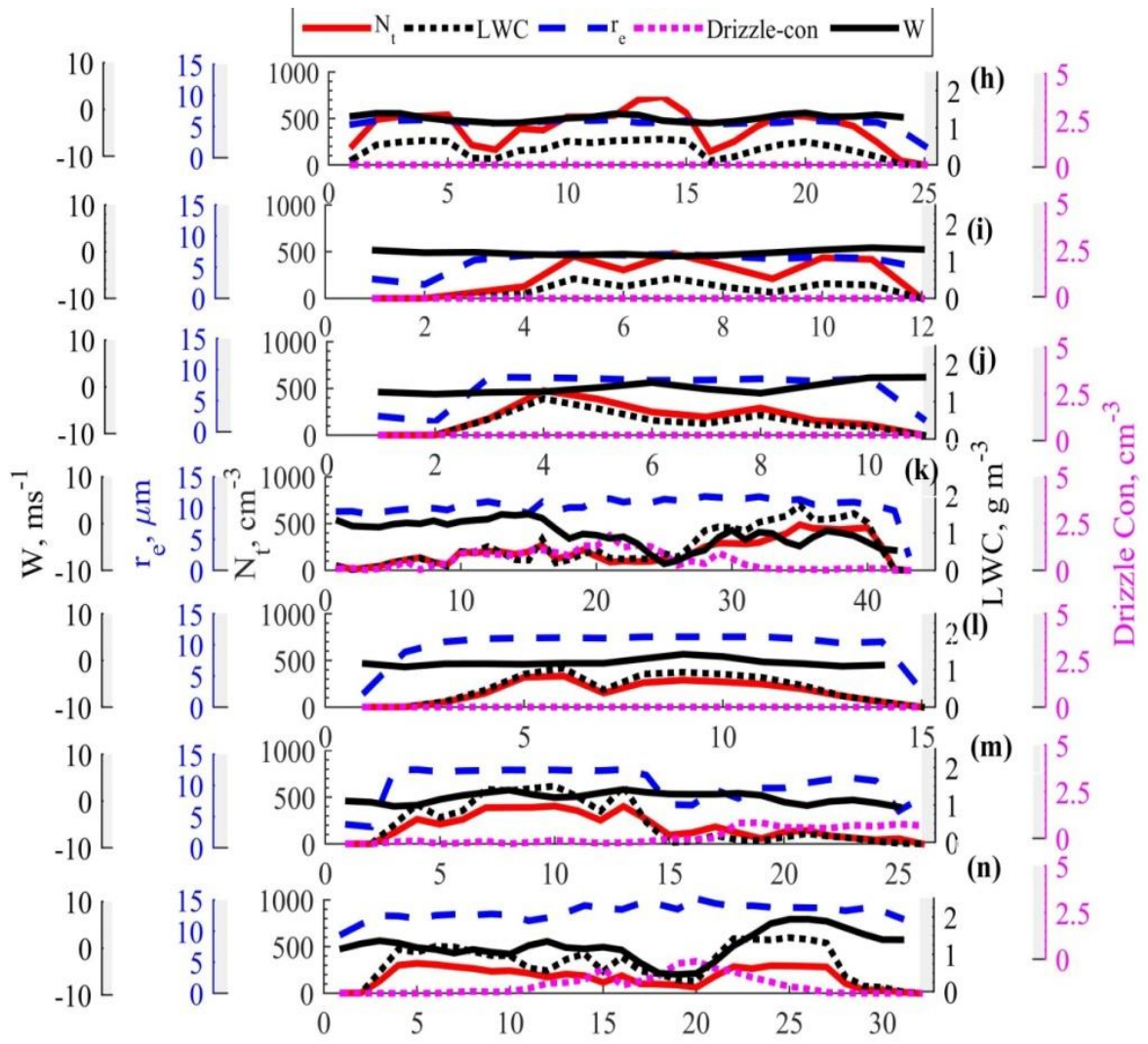
**Figure S4.** Same as Figure S1 but for SCl on 23 Aug 2019.

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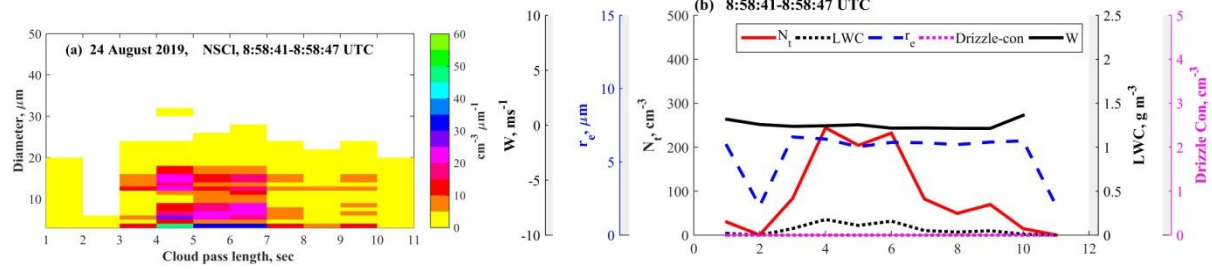52

**Figure S5**. Scatter plot between (a) Effective radius ($r_e$, μm) and K (μg m$^{-3}$), and (b) $r_e$ versus ($r_e$, μm) and Cl (μg m$^{-3}$). The colorbar indicates vertical velocity. –ve values indicate updrafts while +ve values indicate downdrafts.

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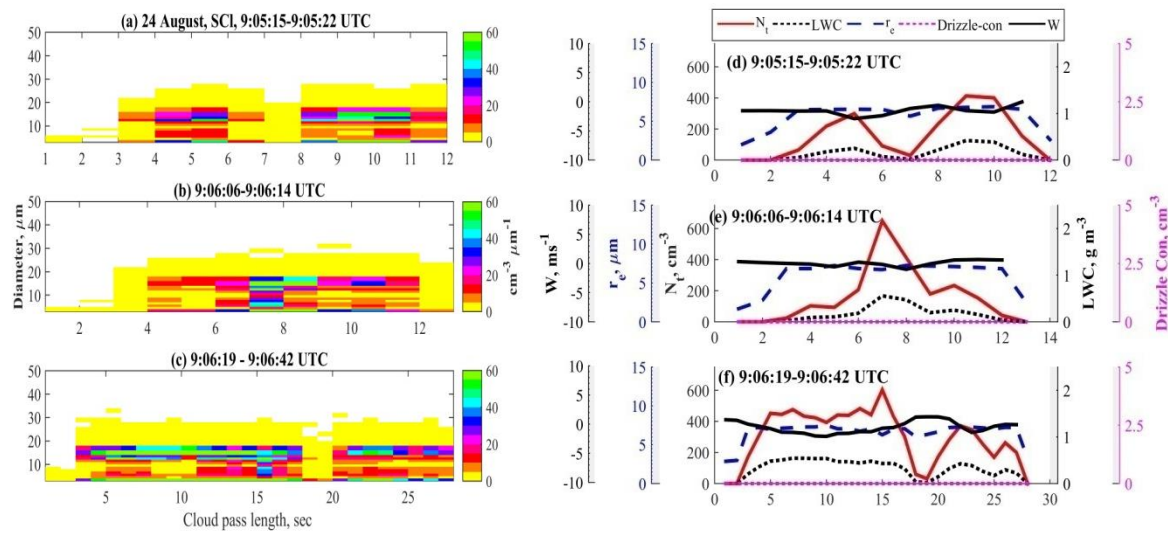**Figure S6**. Same as Figure S1 but for NSCl on 24 Aug 2019. The measurement is above cloud base.



**Figure S7**. Same as Figure S1 but for SCl on 24 Aug 2019. The measurement is above cloud base.