Supplement of

Evaporating brine from frost flowers with electron microscopy, and implications for atmospheric chemistry and sea-salt aerosol formation

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S1 Video to complete Figure 3. Ice spikes sticking out from the main ice body. Imaged by ESEM AQUASEM II, Beam energy 20 keV, ionisation detector, water vapour pressure 348 Pa, sample holder temperature -5.2°C, sample to aperture distance 2 mm.

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S2 Video to complete Figure 5. Dynamical in-situ study of a large size (~100 μm) brine-covered piece of ice formation and breaking-off during slow evaporation of water. Imaged by ESEM AQUASEM II, beam energy 20 keV, ionisation detector, water vapour pressure 348 Pa, sample holder temperature -5.2°C, sample to aperture distance 2 mm.

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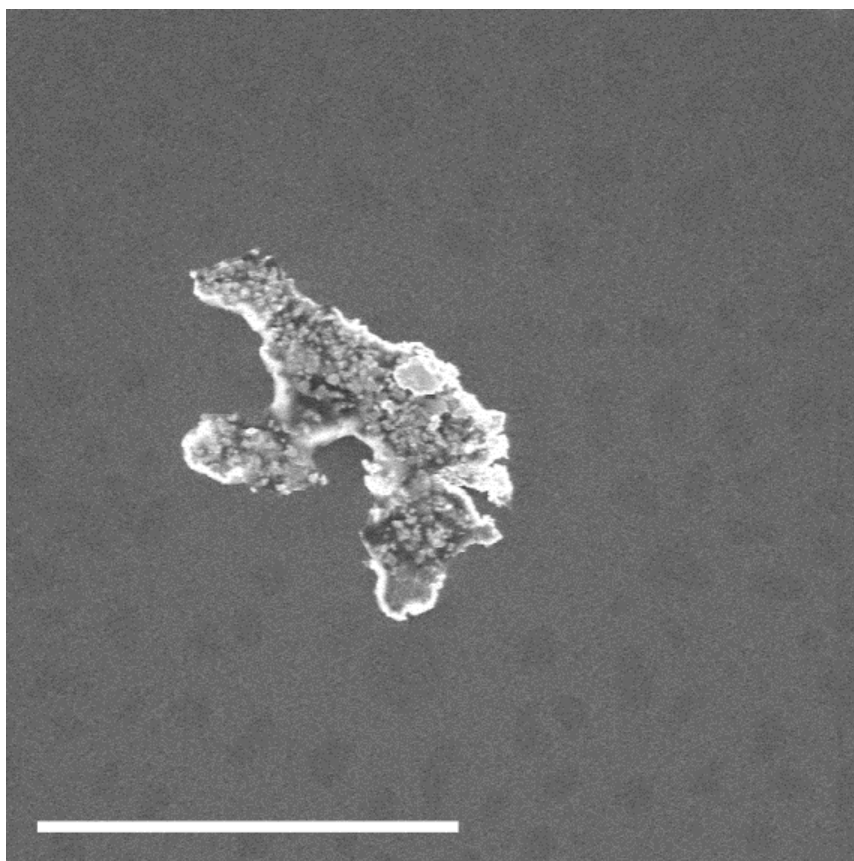
S3: A chunk of salt formed on sample holder after a complete sublimation of a FF crystal in ESEM AQUASEM II. Beam energy 20 keV, ionisation detector, water vapour pressure 225 Pa, sample holder temperature -5.1°C.

S4 Video to complete Figure 7. It demonstrates the flexibility of the fingers. ESEM AQUASEM II, Ionisation detector, air pressure 520 Pa, sample holder temperature -17.0°C, sample to aperture distance 2 mm.

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S5 A video of visualizing the formation of NaCl crystals on the top of the surface brine layer of FF related to Figure 8. ESEM AQUASEM II, Ionisation detector, air pressure 510 Pa, sample holder temperature -15.0°C, sample to aperture distance 2 mm.

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