

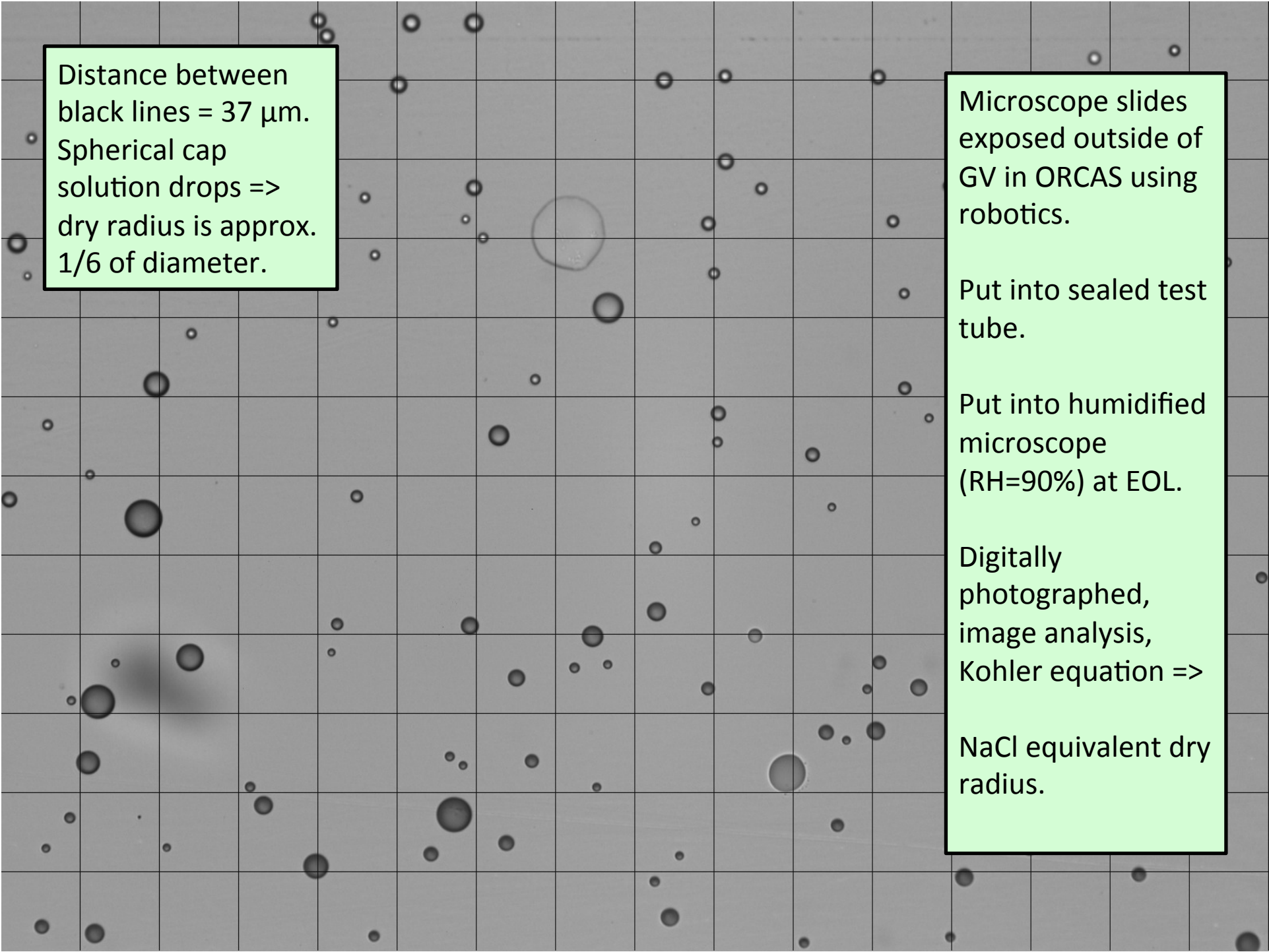
Why sample giant sea-salt aerosol particles in ORCAS:

An important part of the aerosol population (most mass is in the coarse mode or “giant aerosols”)

Important for forming large condensational drops, leading to early coalescence (warm rain formation)

Sampled from GV during ORCAS

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A grayscale micrograph showing numerous spherical droplets of varying sizes scattered across a grid. The grid consists of thin black lines forming a regular pattern. The droplets are dark and have a bright, circular highlight on their upper-left side, giving them a three-dimensional appearance. The background is a light gray color.

Distance between  
black lines = 37  $\mu\text{m}$ .  
Spherical cap  
solution drops =>  
dry radius is approx.  
1/6 of diameter.

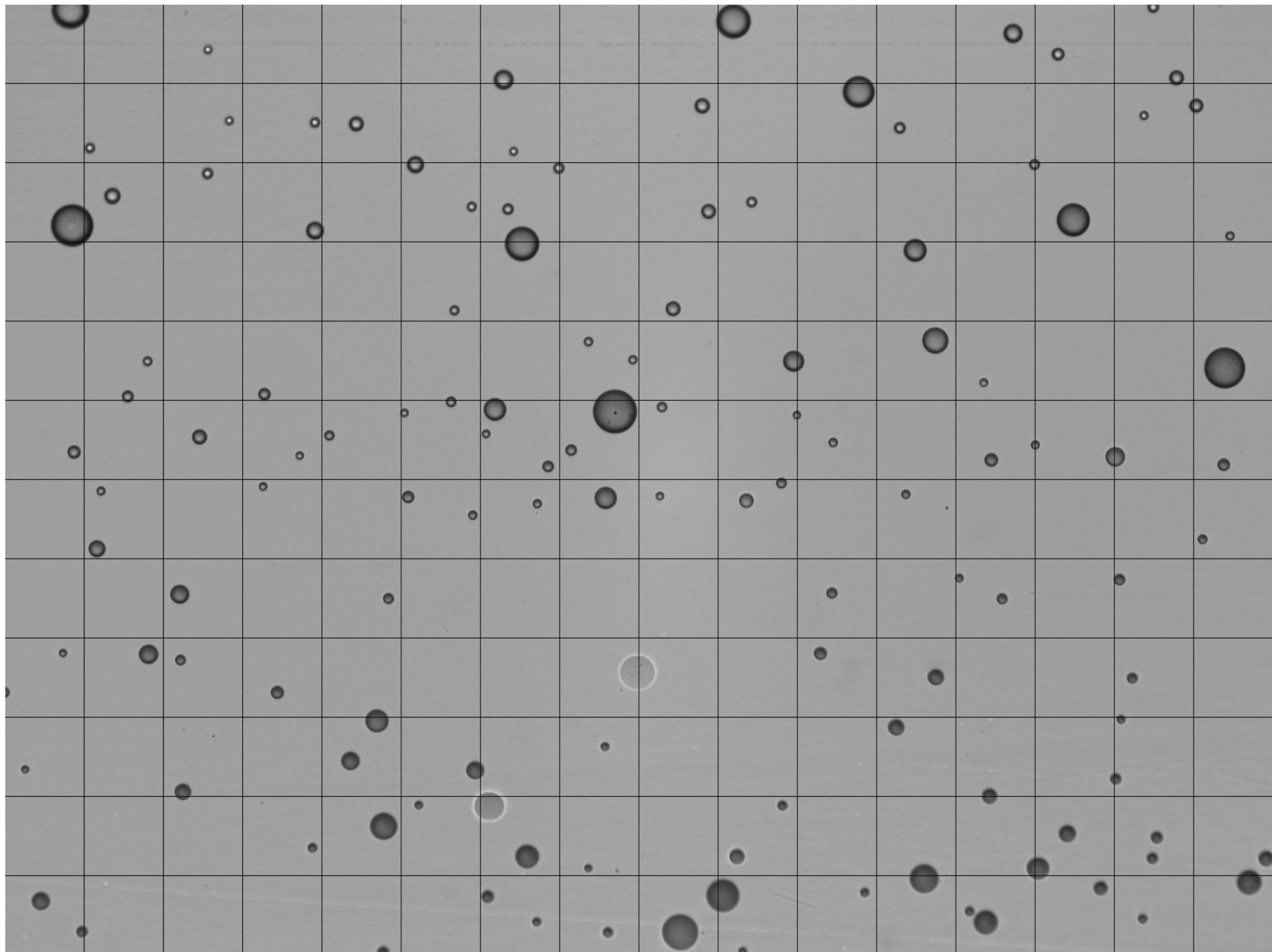
Microscope slides  
exposed outside of  
GV in ORCAS using  
robotics.

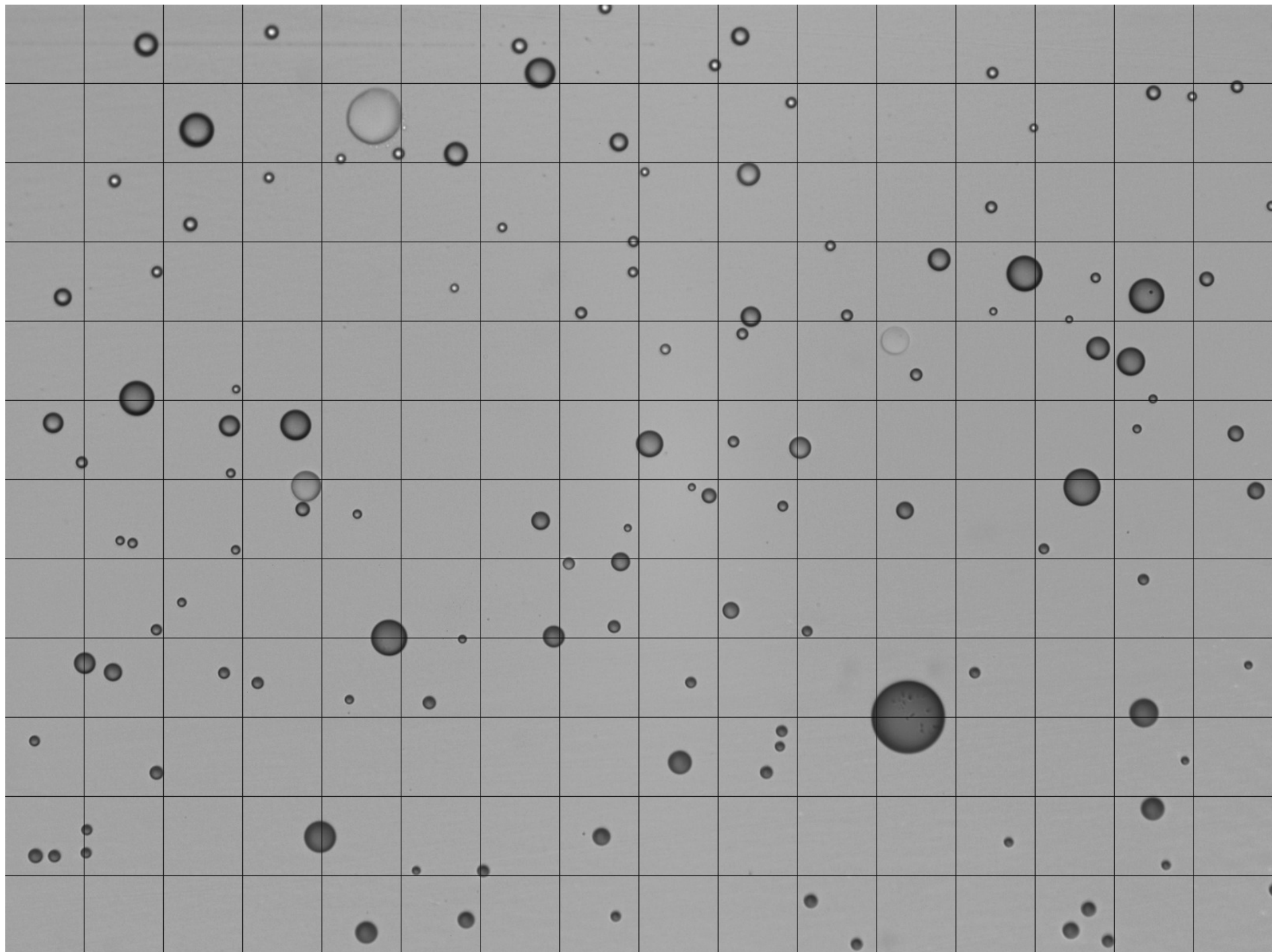
Put into sealed test  
tube.

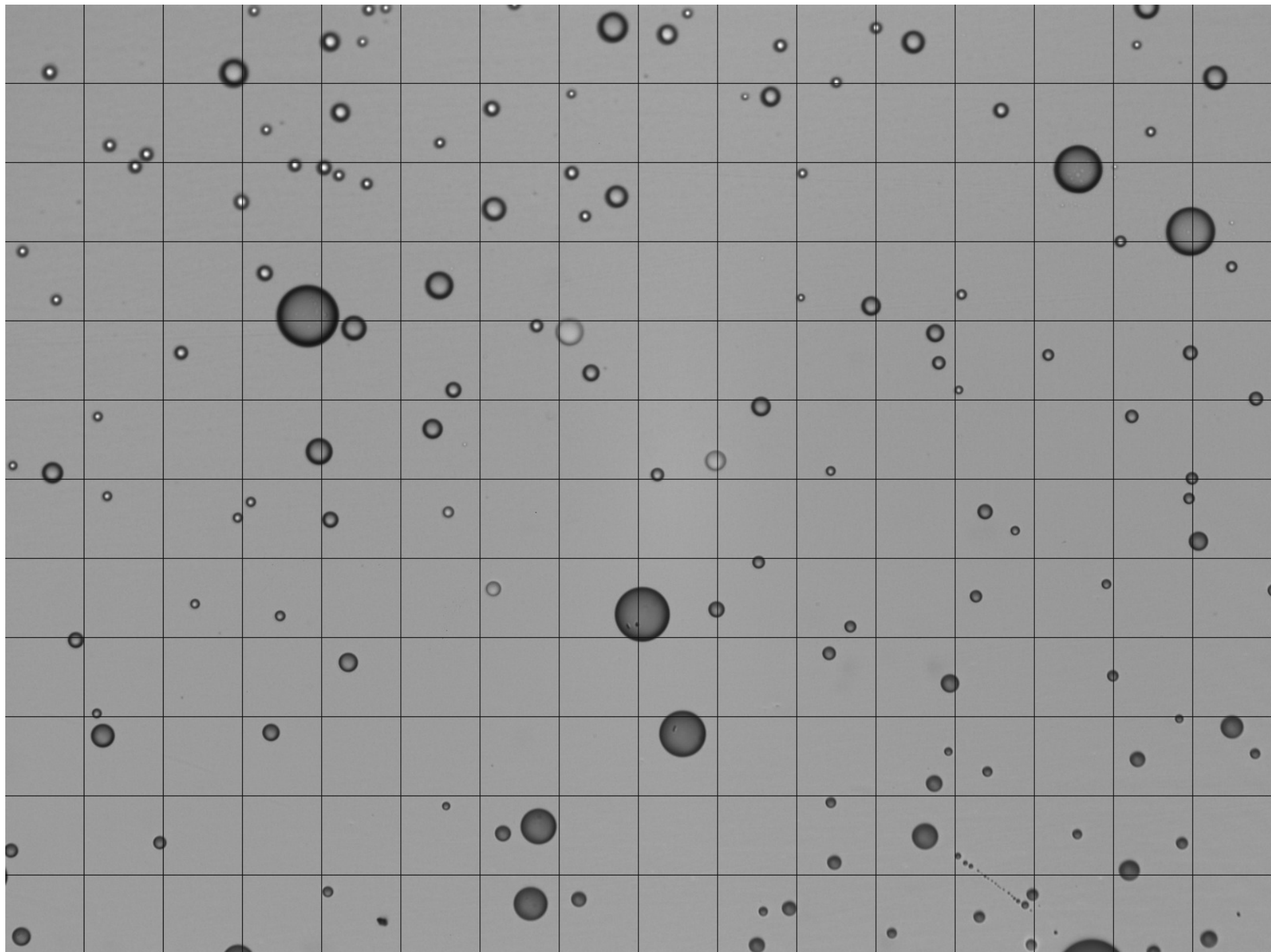
Put into humidified  
microscope  
(RH=90%) at EOL.

Digitally  
photographed,  
image analysis,  
Kohler equation =>

NaCl equivalent dry  
radius.



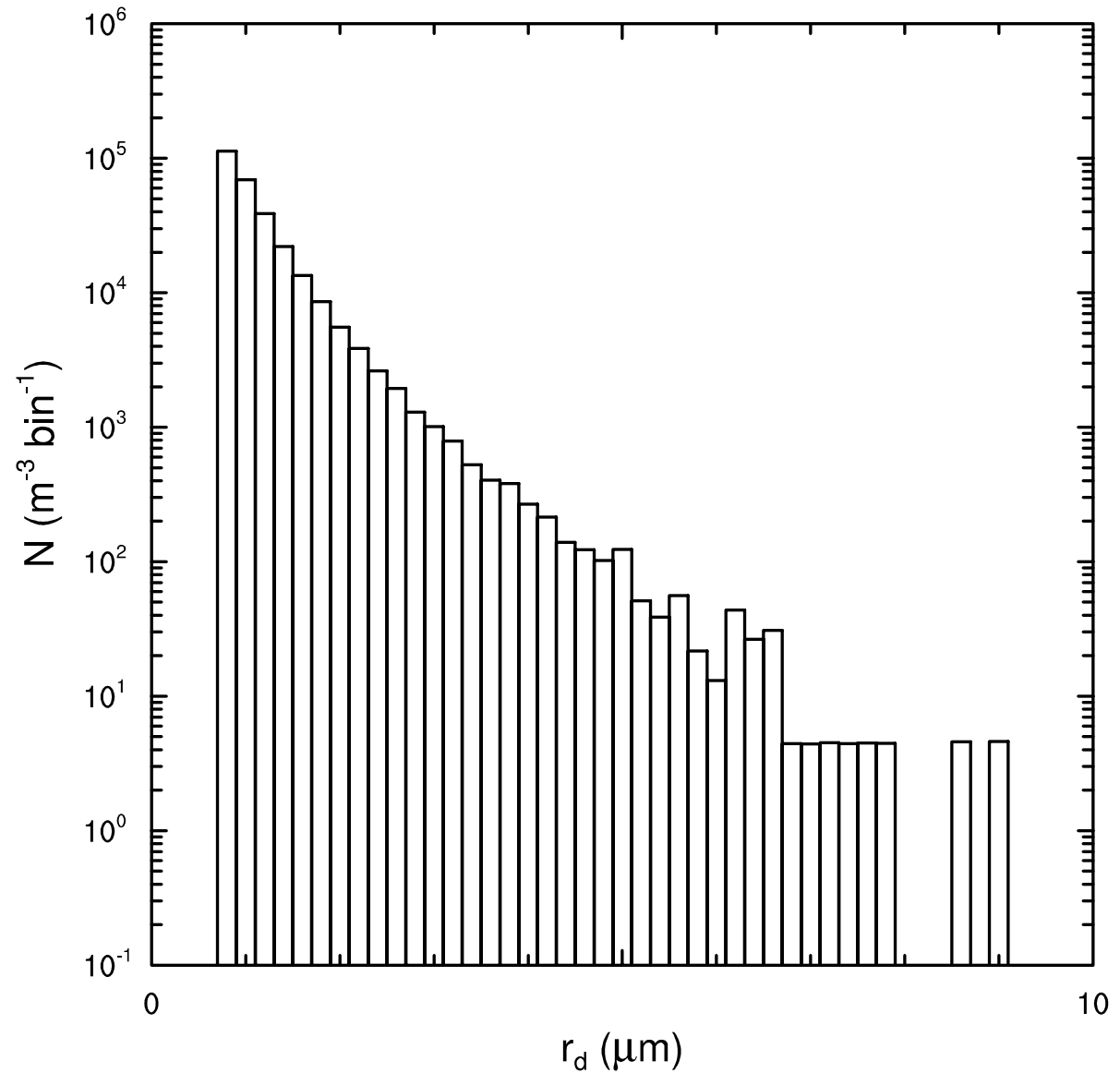




Size distribution of sea-salt giant aerosol particles (GCCN).

Impacted particles up to 13  $\mu\text{m}$  dry radius (NaCl equivalent), this slide has sizes up to 9  $\mu\text{m}$  dry radius.

[Note: Histogram from VOCALS]



What has been done:

Microscope system re-built this summer

A few slides analyzed (takes 3 days for 40 slides in microscope, takes 3 days for image analysis)

Much more to do.

Preliminary observations:

Looks like smaller particles than in warmer regions

Much more to come in the next 6 months.