Tel Aviv University contribution

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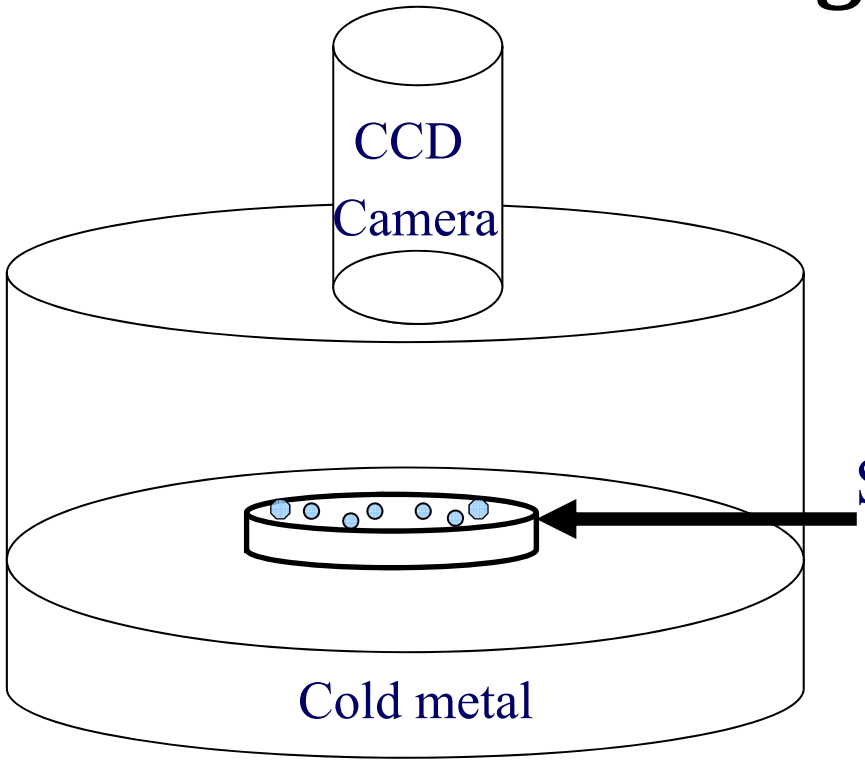
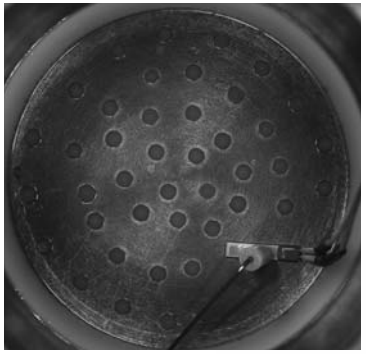
FRIDGE (isothermal static diffusion chamber) studies on:

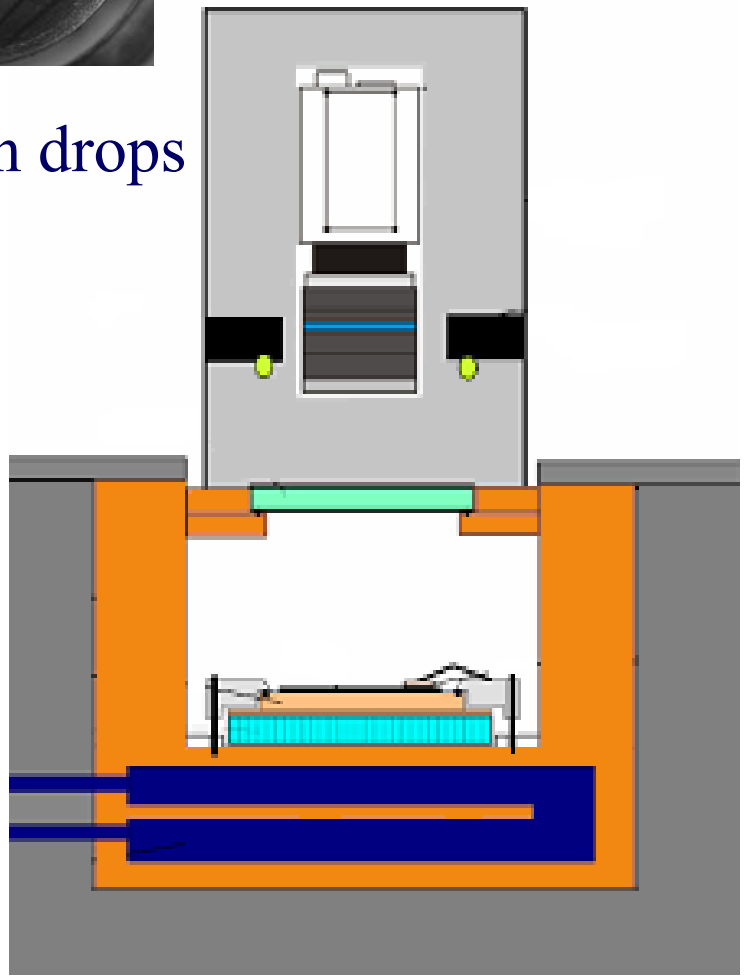
- **Immersion freezing (South Pole samples)**
- **Deposition and condensation freezing (Tel Aviv campus samples)**
- **Intercomparison FRIDGES TAU vs. FRA on AIDA samples (deposition + condensation freezing)**
- **AIDA (fall 2009): SOA vs. Ambient aerosol**

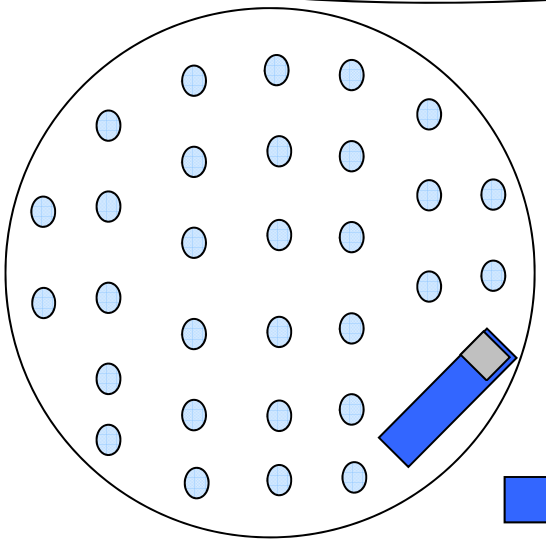
Immersion freezing in the FRIDGE-TAU





Stage with drops





Stage with drops

-Thermometer

Calculation of the concentrations of Immersion Freezing nuclei in the air (#/L) - modified from Vali (1971):

$$K'(\theta) = \frac{1}{V} * \left[\ln(N_0) - \ln(N(\theta)\right] * \frac{x}{y}$$

$K'(\theta)$ – Cumulative concentration of FN in the air, active at temperature θ (#/L)

V – Volume of drop (L)

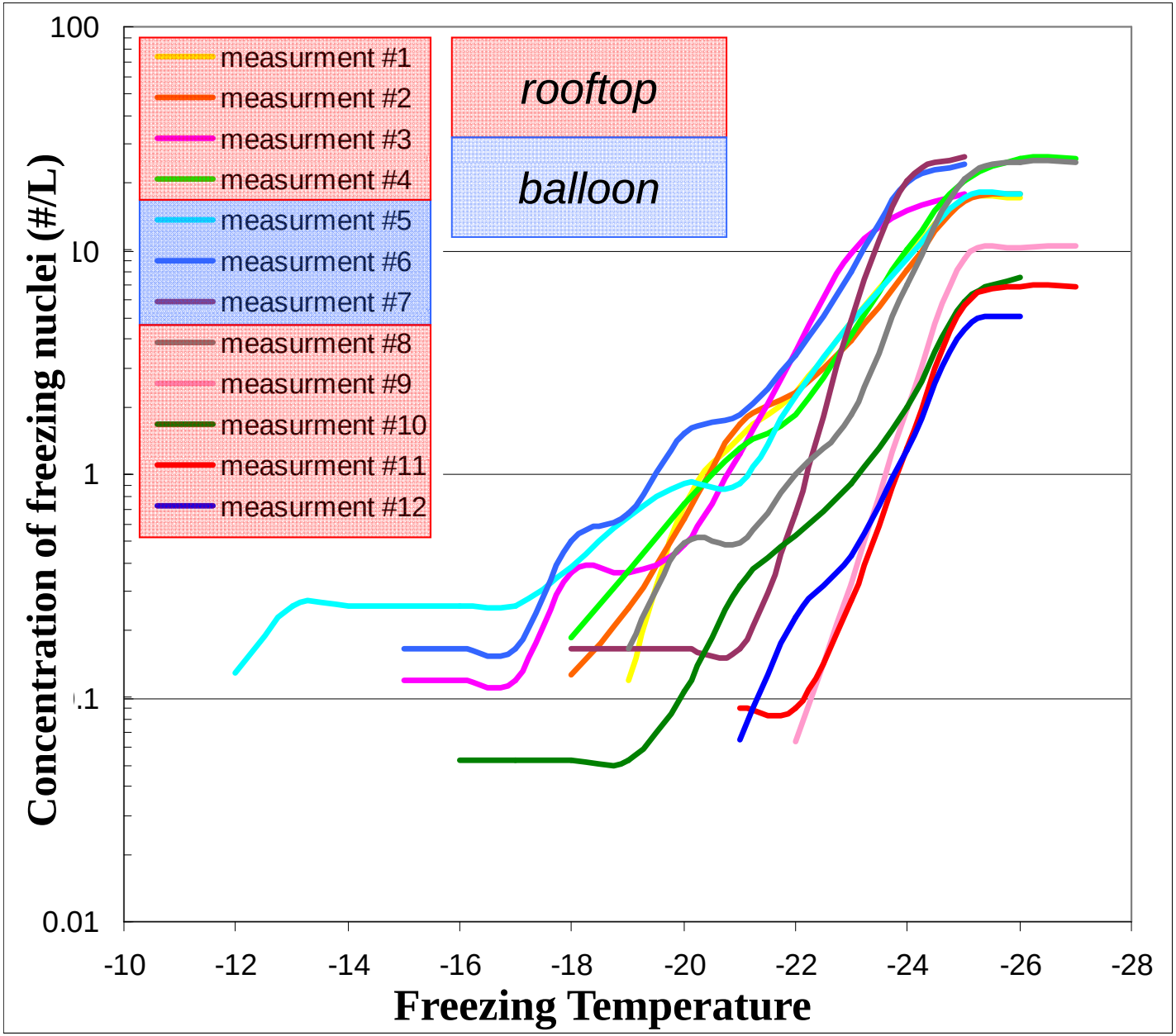
No – Total number of measured drops

N (θ) – Number of unfrozen drop at temperature θ

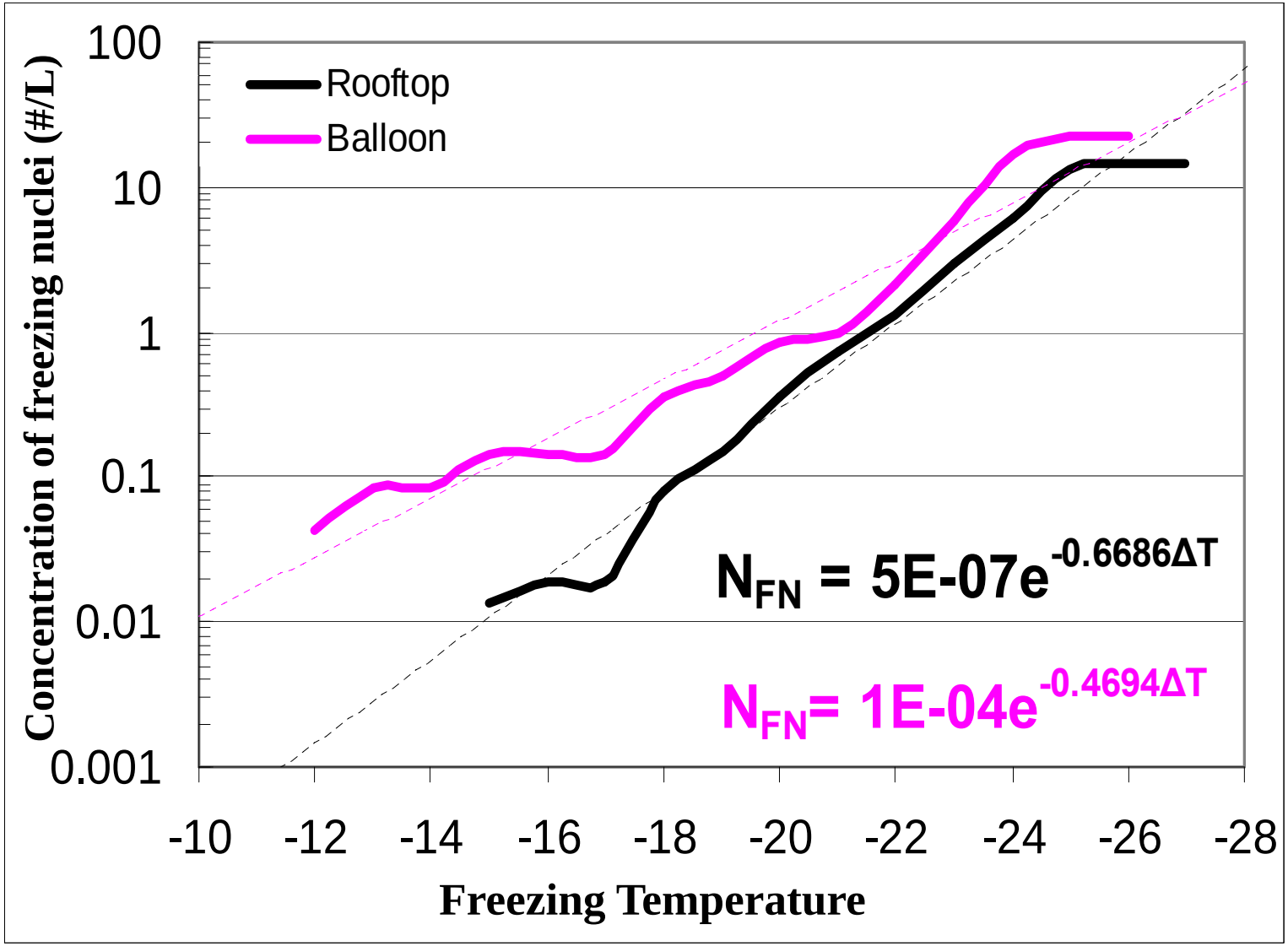
x – The volume of water used to remove the aerosols from the filter (L)

y – The volume of air sampled through the filter (L)

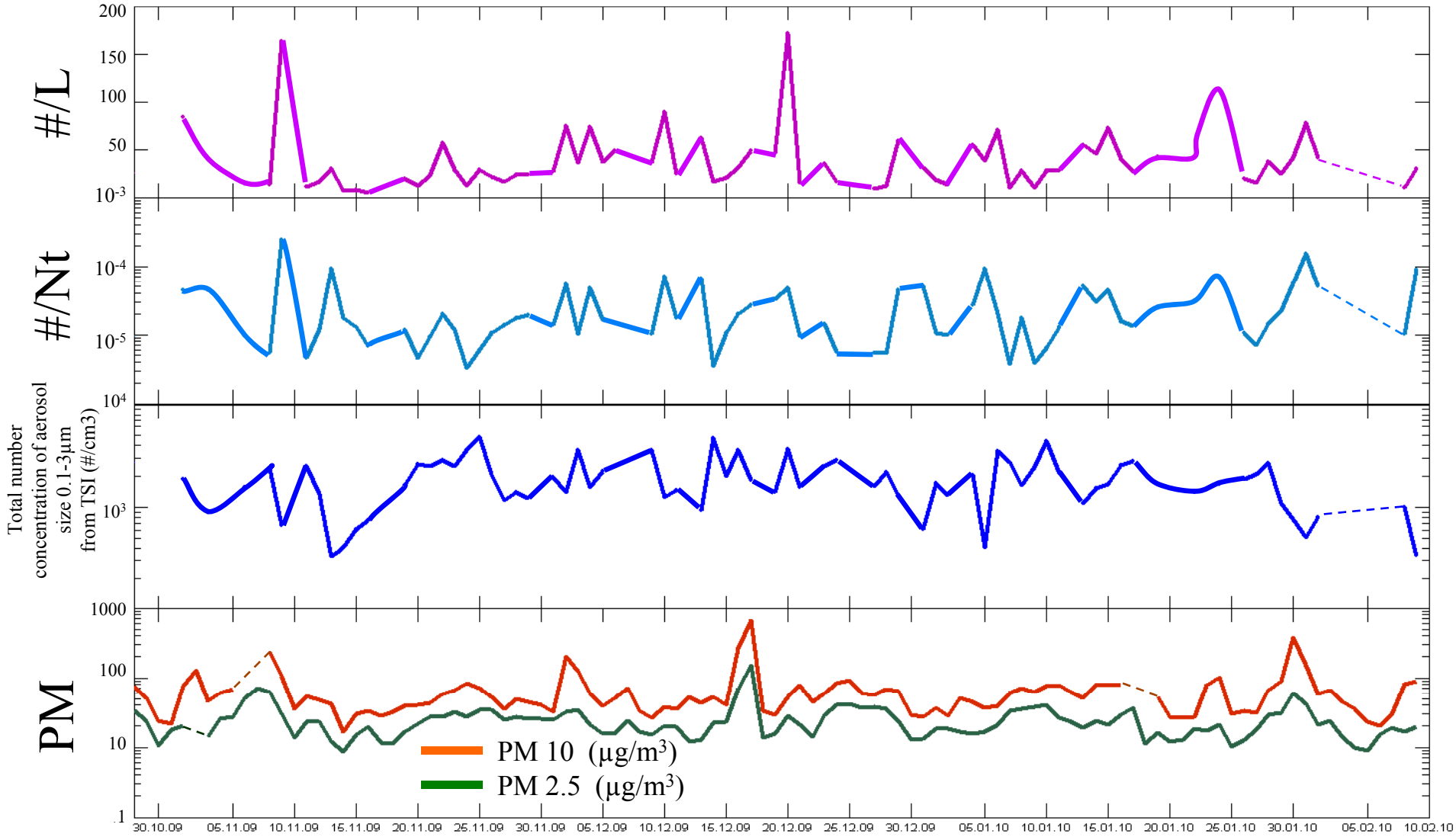
Immersion Freezing

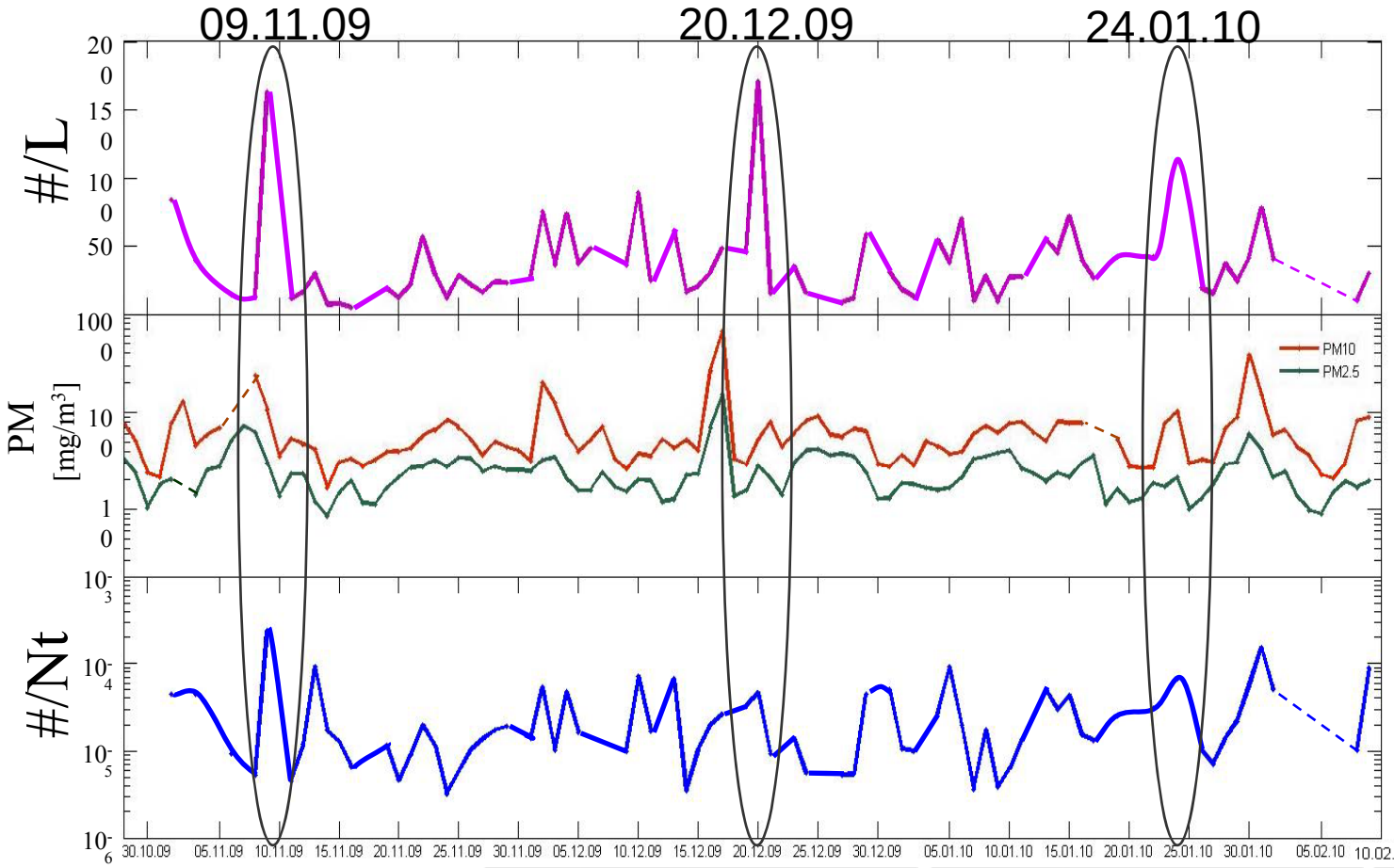


Comparison between measurements taken on the rooftop and with balloon



Measurements in Israel at -18ºc at water saturation



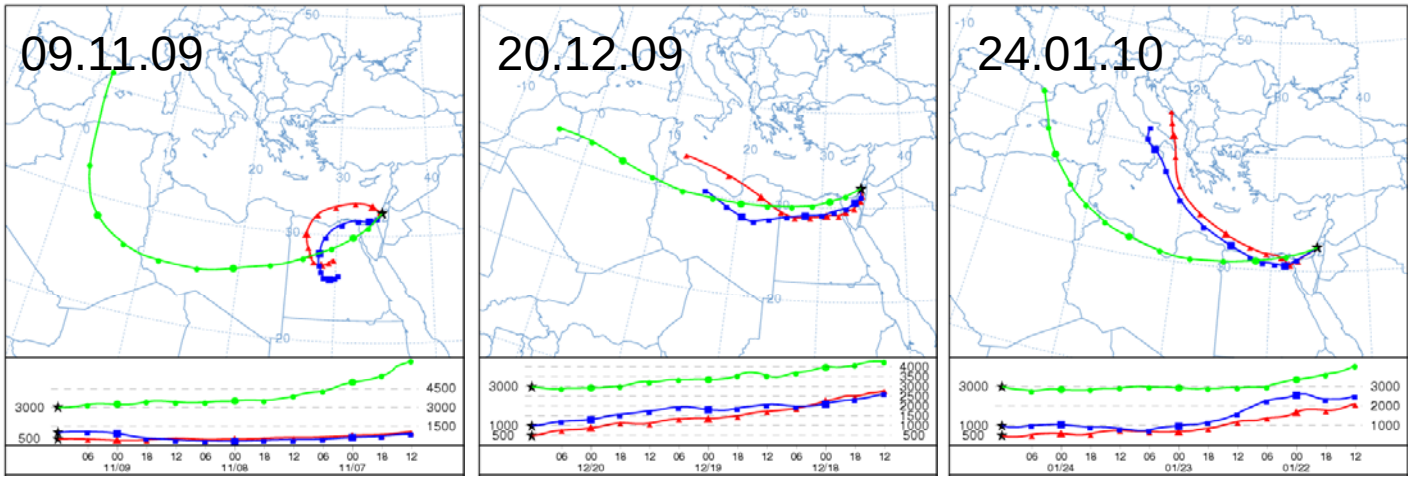


Measurements in Israel

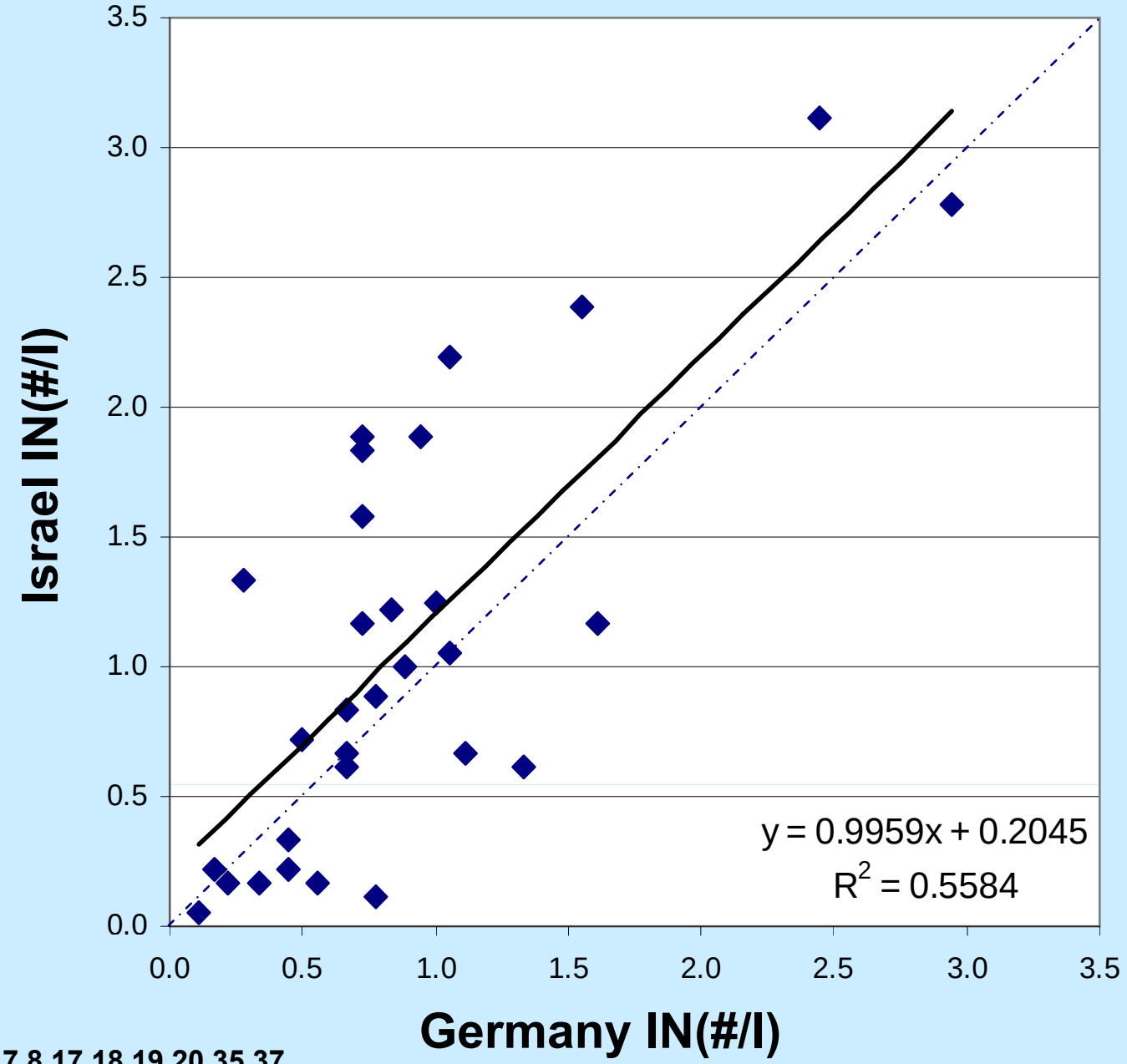
-18ºC at water saturation

Dust Event

HYSPLIT Trajectory



Comparison from Aida measurements (ACI03)



silicon: 5,6,7,8,17,18,19,20,35,37

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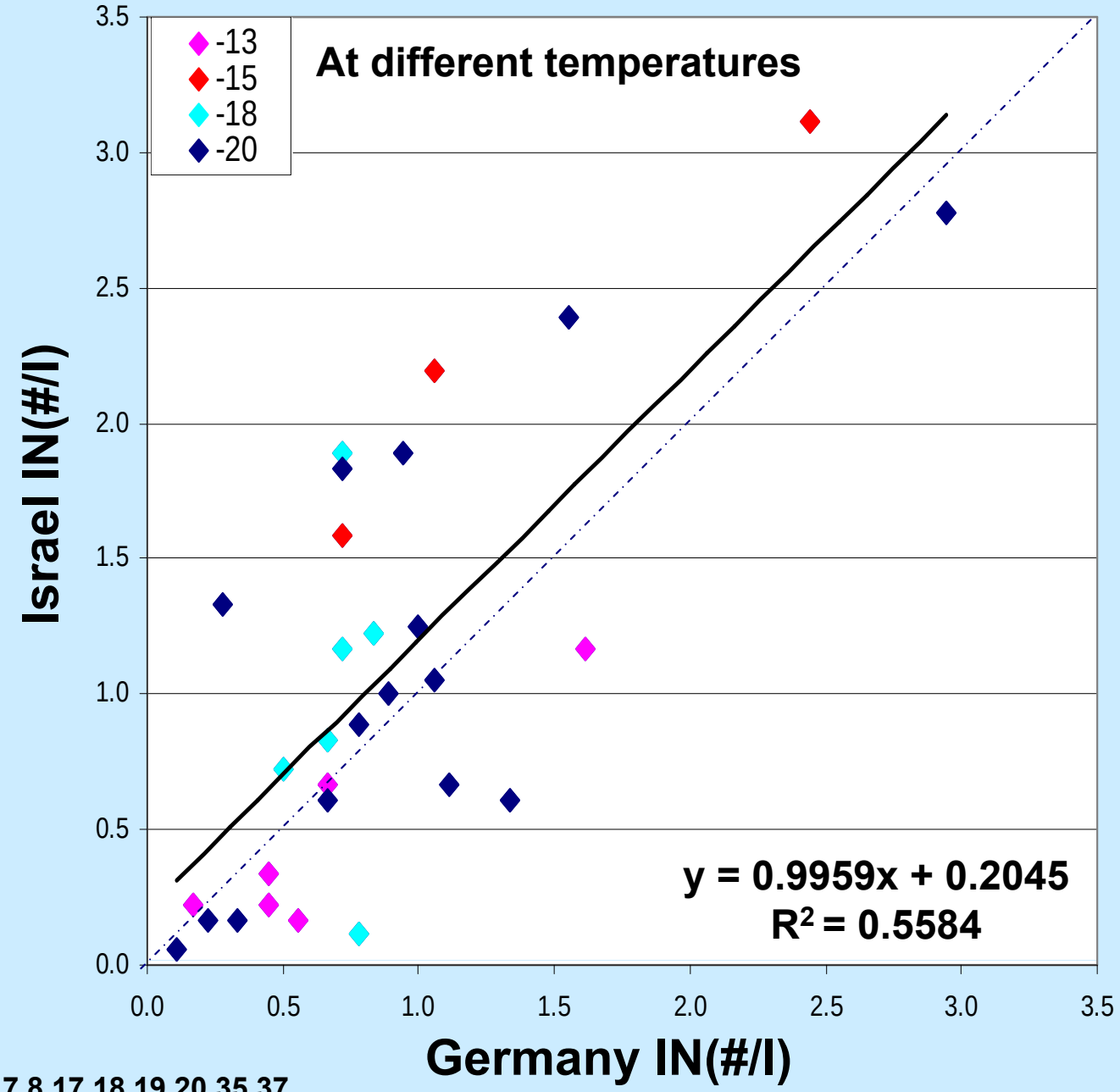

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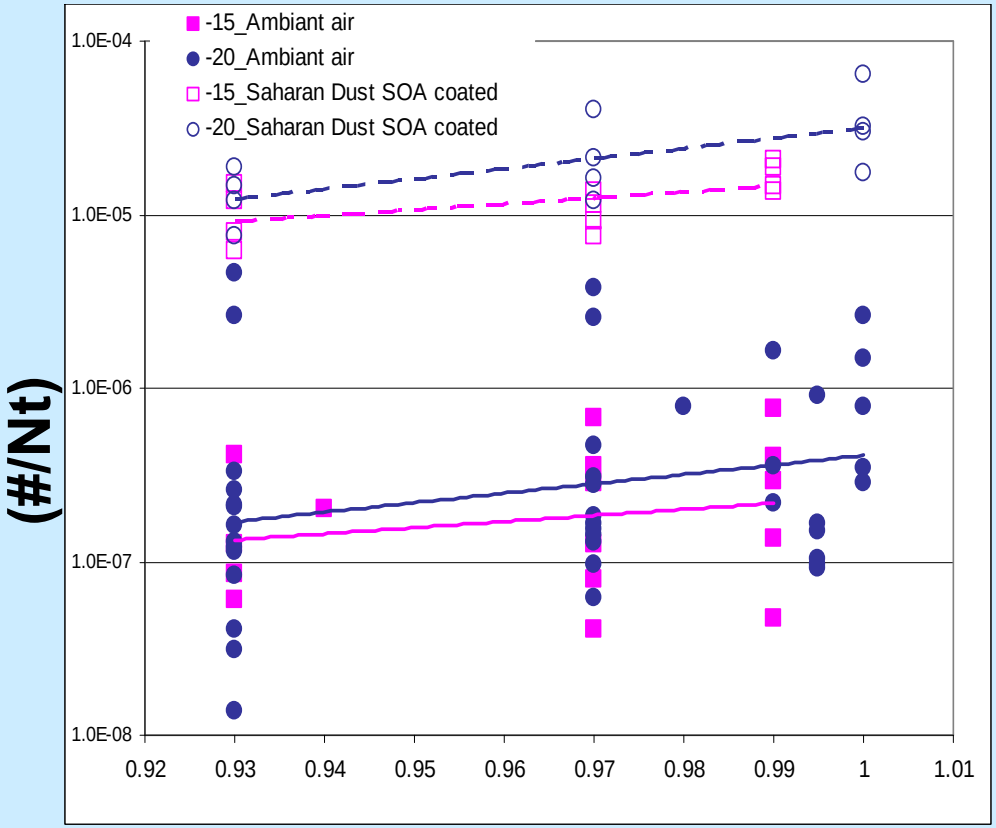
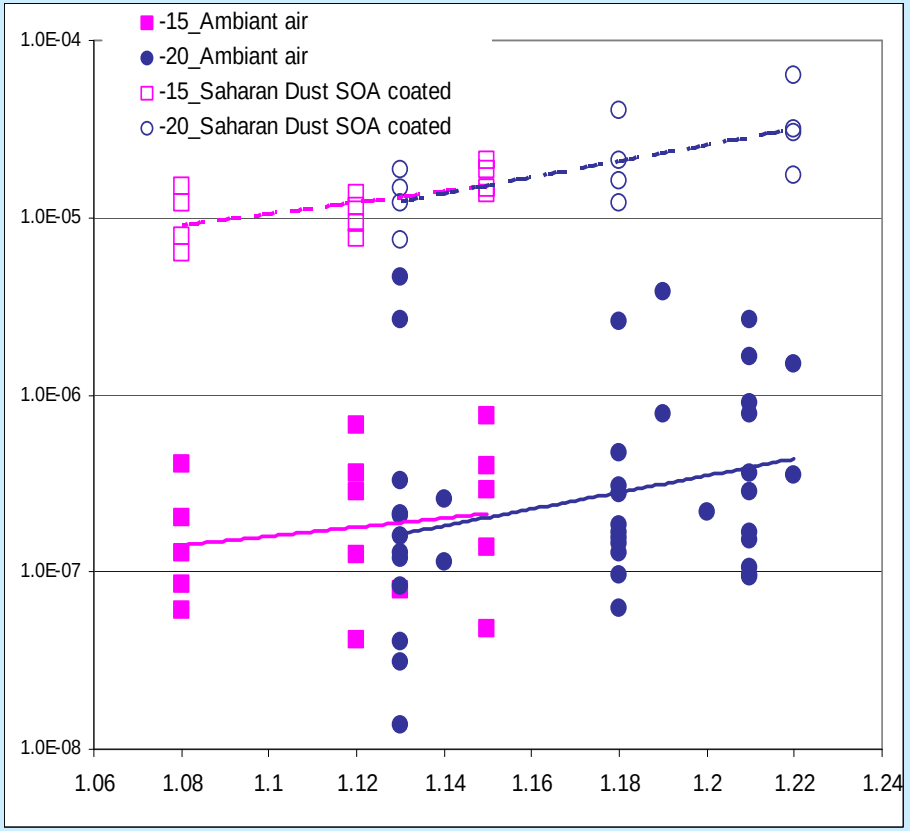
measurements from Aida (ACI03)



Saturation ratio with respect to water



Saturation ratio with respect to ice