

## ***Interactive comment on “New Particle Formation and Sub-10 nm Size Distribution Measurements during the A-LIFE field experiment in Paphos, Cyprus” by Sophia Brilke et al.***

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### General comments

This paper introduces results from measurement campaign made in Paphos, Cyprus. The main goal of the campaign was to show how the novel DMA-train setup performs in field measurements. The article is nicely written and introduces few interesting looking cases of new particle formation events. DMA-train has been shown to work in controlled conditions in CLOUD measurements and this manuscript illustrates that the system is also applicable outside of the lab. However, as the novelty in this manuscript is in instrumental development I feel that Atmospheric measurement techniques might

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be better target journal for this, but I leave this under editor's consideration.

### Major comment

As the reviewer 1 already noted, this manuscript needs lots of additional information on the conditions at the measurement site. Multiple papers have shown that local meteorology, trace gas concentrations and long-range transport affect greatly on new particle formation and thus information on these should be provided. Especially if the paper should be published in ACP. In AMT technical details would be more important.

### Minor comments

in page 6 line 162: I was happy to see that the fit was made with orthogonal distances instead of ordinary least squares as the OLS would give too low estimates for these type of data with high uncertainties. Did you consider other methods taking account the uncertainties?

Page 9 lines 246-264 and Fig 6: This section would benefit of more quantitative approach in discussing the relationships between particle concentrations and trace gases. Fig 6 does not really give information on the trace gas concentrations as the y-axis for NO<sub>x</sub> is poorly chosen. I understand the consistency with fig 7 but here it loses the information in the figure.

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