Response to Anonymous Referee #3.

The referee's comments are in italics, our responses in plain font.

Mikhailov et al. present an instrument characterization of a newly constructed high humidity tandem DMA instrument. The instrument shows improved capabilities compared to previously described setups. The manuscript is well written and I recommend it for publication in AMT.

We thank the Referee #3 for these positive remarks.

Specific comments:

Page 2, line 52: replace "result" with "resulting"
Corrected
Page 2, line 63: replace "due" with "to"
Corrected
Page 2, line 67: add missing parenthesis after the citations
Corrected
Page 2, line 68: replace "effect" with "effects"
Corrected
Page 3, line 76: rephrase the sentence starting with "However, due to: : :."

A new version is:
However, the resulting growth factor error at high humidity is significant since the relative humidity was obtained using a dew point sensor. (Further down in the text.) Thus, at RH = 97.7 % the precision quoted by authors in absolute units is ±1.2 % and particle growth factor uncertainty is 16.6 % (±0.46 at growth factor value of 2.79).

Page 3, line 82: add "for" after "this instrument allows"
Corrected
Page 3, line 88: rephrase the sentence starting with "The averaged in the 80-99%..."
The sentence was modified as following:

The resulting growth factor uncertainty associated with RH and instrumental errors is ~2%, which is propagated in hygroscopicity and activity coefficients of ±20 %.

Page 4, line 110: add "a" in front of "circulation thermostat"
Corrected
Page 4, line 111: add "are" before "operated at 26C.."
Corrected
Page 4, line 114 and following: I would suggest to use present tense and not past tense to describe the difference in e.g. PT100 sensors uncertainty.
Corrected
Page 5, line 145: replace "nebulize" by "nebulizing"
Corrected
Page 5, line 162: the units of 1 l/m should rather be 1 l/min
Corrected
Page 5, line 172: rephrase the whole sentence, very unclear

The text was modified as following:

The humidity of the aerosol flow (RH3) and sheath air (RH4) in DMA2, is controlled by mixing water saturated and dry air flows in a ratio produced the desired RH. Saturated air is obtained by passing dry air through a Gore-Tex membrane tube submerged inside a temperature controlled water bath (27.0 ± 0.1 ºC). Two separate 6 mm (ID) Gore-Tex tubes, 0.5-m and 2-m long are used for aerosol and sheath flows conditioning, respectively (Humidifier, Fig. 1). For the H1 Nafion

exchanger the humid air is prepared by bubbling air directly through water and then mixing with dry air to the required humidity (not shown in Fig.1).

Page 7, line 214: wrong units for the error of the dry mobility diameter (should be nm)
Corrected
Please check carefully the whole manuscript for missing articles like "the" or "a", singular and plurals and the use of past and present tense.

Done.