

Atmos. Meas. Tech. Discuss., referee comment RC1  
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## **Comment on amt-2022-134**

Anonymous Referee #1

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Referee comment on "Intercomparison of detection and quantification methods for methane emissions from the natural gas distribution network in Hamburg, Germany" by Hossein Maazallahi et al., Atmos. Meas. Tech. Discuss.,  
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- In line 333, are the equation 3 taking into account the meteorological factors? If not, please evaluate the impact of meteorological data on the final results.
  
- Whether the large distribution of the maximum enhancement mentioned in lines 471-473 will affect the judgment of the threshold, and thus affect the results
  
- Are the values of relative uncertainty mentioned in lines 479~486 too large and Whether they will affect the overall degree of confidence of the data
  
- What is the cause in lines 756-760 that the emission rates of the locations provided by the LDC were much lower than the locations detected by mobile measurements

- About The two C<sub>2</sub>H<sub>6</sub> signals mentioned in lines 789~794 that are not confirmed as the location of leakage by LDC, you suggest two reasons that they are related to the distant leakage and transmission, or surrounding emission sources. For the first reason, Is it possible to compare the wind speed and direction when C<sub>2</sub>H<sub>6</sub> signals are measured to find the location of leakage, For the latter reason, can you match the signal with the sources may produce both CH<sub>4</sub> and C<sub>2</sub>H<sub>6</sub>.