

Interactive comment on “Calibration of non-ideal thermal conductivity sensors” by N. I. Kömle et al.

Anonymous Referee #1

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It is indeed useful to demonstrate robust methods for thermal conductivity measurement and understand deviations from the ideal case of a line heat source.

This work demonstrates the cross-calibration between the LNP sensors and the TP02 sensor, but it is not clear how, more generally, one may determine whether or not the calibration of a practical sensor may be approximated, over a particular range of thermal conductivity, using a constant factor f_{cal} . A comparison of the results with model predictions for f_{cal} would also have been useful. Without addressing these two points, this work seems to be of only qualitative use outside the scope of the particular sensors and T_c range used.

p688: "The only space instrument that has measured thermal conductivity on an extraterrestrial body other than the Moon was the TECP-instrument aboard the NASA Phoenix spacecraft." - This is not quite true, as the THP sensor of the Huygens Surface

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Science Package measured the thermal conductivity of Titan's atmosphere. Maybe a caveat '... of solid material...?'

Figure 5: Please explain the dotted lines.

Conclusions: * 1st sentence - why? Because the non-radial (i.e. up and down) component of heat flow is significant? * 'almost linear' - not a quantitative statement. * What constitutes 'suitable' measurements (e.g. with what precision)? * What constitutes an 'appropriate' thermal conductivity range?

p686, 2nd line of Abstract: delete 'to evaluate'.

Interactive comment on Geosci. Instrum. Method. Data Syst. Discuss., 2, 685, 2012.

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