Geoscientific
Instrumentation
Methods and
Data Systems

Discussions

GID

2, C329–C330, 2012

Interactive
Comment

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

N. I. Kömle et al.

norbert.koemle@oeaw.ac.at

Received and published: 15 December 2012

Response to the comments of Reviewer 1:

General remarks: Please note that this paper was considered an an add-on to the previous paper by Hütter and Kömle (2012) cited in the reference list. There modelling results using finite element computations have been extensively presented and discussed. We did not want to repeat this here. We admit that by now we have only ecterimentally tested the calibration curve between the ideal and nonideal sensors in the range 0.2 - 2. W/m/K. It is a necessary (and planned) task for the future to do the same type of comparisons for powdersunder vacuum, in order to extend the calibration curve towards lower conductivities. However, this was beyond the scope of the present paper. Nevertheless we will include this aspect in the the conclusions section of the revised version.

p.688: We agree. We will mention in the revised version the Huygens THC sensor as one of the predecessors actually used on a space mission, which has done extraterrestrial THC measurements (although for gases, not for solids).

Fig 5: The dotted lines simply represent the linear connections between measurement points, in orde to make the linear relation between the measured THC values better visible on the graph. We will note this in the caption of the revised version.

Conclusions: It is true that for the short thick sensors the axial heat loss (via the wires) plays a significalt role and is probaply the mayn reason why measured THC values are different for the two types of sensors used. This has also been demonstrated by the modelling results showm in Hütter and Kömle (2012) and seems to be confirmed by our calibration measurements. Fig 5 demonstrates the suitabilty of a linear fit at least for the investigated THC range.

p. 686: will be corrected in the revised version.

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper