



Micro-calorimetry dedicated to radiative transfer monitoring

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It is a documented physical phenomenon that energies in all transfers constantly deteriorate to heat. Especially in the radiative flux monitoring, absorption by a surface induces temperature excursions depending of its parameters. This fact covered in the calorimetry concept, could be exploited for radiometers design. We will deal in this presentation with the means and methods finalized at the Royal Observatory of Belgium (ROB) to address this idea. Thermistors with original electronics allow to introduce monitoring at the level of precision of the μ Kelvin. This is far below the absolute determination which is announced in term of mili-Kelvin. A series of thermal approaches is introduced that illustrate the abilities of extremely precise thermometry, to improve the understanding of intricacies of radiative signatures from celestial bodies. Different thermometric applications dedicated to geophysics, are described in order to introduce the micro-calorimetry concept and its applicability.

SHORT BIO:

Michel van Ruymbeke, emirate professor at University Catholique de Louvain. Senior scientist at Royal Observatory of Belgium. He has initiated the EDAS (European Data for Scientist) concept in 80s, under this concept, many education program and field experiments were developed in Europe, Asia and Africa. He is the PI of the BOS experiment on the PICARD microsatellite, the key designer of gravimeters and their calibration platform for steroids and planetary bodies.