

Activities in 2004 focussed on both organisational efforts to create improved conditions for the UTCI development (II) and further steps to the UTCI development (III, IV).

- I Due to Peter Hoeppe's change in position the UTCI web site moved from the Munich university to DWD: www.dwd.de/UTCI including some revisions and updates.
- II By looking for improved conditions for the UTCI development the idea of a new COST (Co-operation in Science and Technology) Action arose. The action has been successfully launched (COST Action 730 "Towards a Universal Thermal Climate Index UTCI for assessing the thermal environment of the human being")

COST is an intergovernmental framework for European Co-operation in the field of Scientific and Technical Research, allowing the co-ordination of nationally funded research on a European level. Nevertheless COST has a geographical scope beyond the EU. COST also welcomes the participation of interested institutions from non-COST member states without any geographical restriction. Although it does not provide funding for research activities it will fund the co-operation efforts of scientific groups across Europe (mainly travelling costs to meetings, workshop/conference organisation costs, dissemination costs, short scientific exchanges of researchers).

All members of ISB commission 6 from Europe as well as from Canada are also members of the COST 730 group. So the COST Action is intended to help co-operation and will hopefully enhance and accelerate the activities of the ISB Commission 6 concerning the UTCI development. The work within the COST Action will begin midyear 2005 and will address the following issues:

- a) Heat budget modelling of the human body
- b) Physiologically relevant assessment of heat budget model outcomes including acclimatisation
- c) Testing results against available field data
- d) Identification and pre-processing of meteorological input data
- e) Estimating radiation quantities
- f) Addressing the specific needs of various applications

The above listed topics will be addressed by three working groups:

WG1 Thermophysiological modelling and testing

WG2 Meteorological and environmental data

WG3 Applications.

Further information concerning the COST Action 730 can be found at the UTCI homepage (see I).

- III It was agreed earlier that UTCI will be based on the most advanced multi-node models of human thermoregulation. Up to now this physiological data base is defined by the results of Dusan Fiala's multi-node model available for some thousand simulation cases. Richard deDear stayed in close contact to the Japanese Tanabe group who are preparing the accordant results of the Tanabe 65-node model. Some of the results are already available. A preliminary model comparison (Tanabe model – Fiala model) for very cold conditions (clothing 2.6 clo) shows a very close match of the skin temperatures. Also the core temperatures differ only within the range of 1 Kelvin. As soon as the complete data exchange has been managed a comprehensive

comparison of the results of the two multi-node models can be done to create a broader physiological data base for the UTCI development. ISB provided some funding in order to accelerate these simulations.

- IV Several model comparisons of the outcome of existing heat budget models (ASHRAE – SET, MEMI, MENEX, PSW) with the Fiala multi-node model have been done. The results of the models were calculated for the whole range of clothing insulation (0.4 to 2.6 clo) - if appropriate - and a subset of the other variables in each case given by 3 different values of air temperature T_a as well as 5 different values of air velocity v , mean radiant temperature equal to air temperature $T_{mrt} = T_a$ and relative humidity $rh = 50\%$. The comparison included mean skin temperature, body core temperature as well as all components of the heat balance. The model comparisons did not give a unique picture in terms of a systematic consistency of each of the heat budget models in relation to the Fiala multi-node model. So the data basis from the Tanabe simulations are urgently required.