



## **Felt temperature computations at the Bulgarian weather service**

Ilian Gospodinov and Anna Tsenkova-Bratoeva

National institute of meteorology and hydrology, Bulgaria (ilian.gospodinov@meteo.bg)

Felt temperature computations have become an indispensable part of the responsibilities of a national weather service in the recent years. Complete heat budget models of a human body in the thermal environment of the atmosphere near the ground have emerged as a natural and comprehensive method of predicting the felt temperature. The most challenging part of the implantation of such models is the computation of the mean radiant temperature. It requires the implementation of a thorough thermal balance model of the Earth's surface in order to achieve the surface temperature. The Bulgarian weather service has recently developed and implemented independently a system of such models following the work of other authors. The result is state-of-the-art operational felt temperature computations based on measured or derived from atmospheric models meteorological data. Thermal comfort index based on felt temperature has also been implemented. It is a measure of the physiological stress which a human would be exposed to in outdoor conditions. It therefore can be used to assess and predict exhaustively if thresholds of dangerous thermal conditions are met. It is used for the production of operational weather warnings in experimental mode.