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52 A microcomputer model for the thermal comfort prediction in moderate thermal environments

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A simple simulation model of thermal regulation processes in man was presented. This model was based on concepts represented by members of the Thermal Physiology School of the **J.B.** Pierce Foundation Laboratory and Yale university - mainly by **J.A.J.** Stolwijk, **J.D.** Hardy, and A.P. Gagge. A simple CORE-SHELL model represents an "average" human body (the passive subsystem) and a regression function operating on "signals" from the skin and the core represents the thermal controller (the active subsystem). Fanger's concepts of PPD and PMV (predicted percentage of dissatisfied and predicted mean vote) were included into the model to make it comparable with an approach of IS0 7730 standard. This standard deals with an assessment of moderate thermal environments. The model was implemented on a simple &bit microcomputer. The program was organized in such a way to be usable even for non-experts in the field of thermal physiology. Some simulation experiment results were presented. They generally show a very good performance of a model in predicting thermal comfort conditions. Similarities and differences between the IS0 standard approach and the model presented were discussed briefly.