International Journal for ENGINEERING MODELLING
Vol. 7, No. 3-4, 1994.

Modelling of transient temperature fields in structures with system transfer functions

Danilo Feretić, Nikola Čavlina and Davor Grgić

Faculty of Electrical Engineering and Computing, Avenija Vukovar 39, HR-10000 Zagreb, CROATIA

SUMMARY

Many heat transfer transient problems could be alternatively solved by numerical integration of system frequency response characteristics. This method is applied to solve transient temperature distribution within a solid slab and the results are compared with analytical solution. In addition the method is also applied to the analysis of a combined transient heat conduction and convection heat transfer problem relating to fluid temperature changes within a pipe. The problems of this kind are linked to dynamic analysis of conventional or nuclear power plants.