Computer Models For Fire and Smoke

Model Name: PALDET

Very Short Description: Predicts response time of sprinklers and fire detectors under an unconfined ceiling.

Modelers, Organization: Matti Kokkala, Jouni Bjorkman, VTT Technical Research Centre of Finland, Fire Technology Laboratory

References: Bjorkman, J., Huttunen, O. and Kokkala, M., Calculation models for fire detectors, Research Notes 1036, Technical Research Centre of Finland

Availability: Cost ?; contact VTT

Hardware: IBM-compatible PC

Language: Quick Basic

Size: 35 kB

Detailed Description:
Input:
- For thermal detectors: RTI and conduction parameter for smoke detectors: response threshold and characteristic length
- Ceiling height, detector distance from ceiling, fire growth parameters, radial distance of the detector

Output:

Output as a set of curves: response time as a function of a chosen variable (e.g., RTI) with another chosen variable (e.g., ceiling height) as a parameter; results available as tables if preferred.

Assumptions:
- Unconfined ceiling
- Steady of t^2-fire
- Temperature and velocity distributions practically as in report NBSIR 88-3734 (by Cooper).

Limitations:
- Comments and instructions for the user are given in Finnish!
- No automatic graphs mode control.