The Challenge of Maintaining FDS and CFAST

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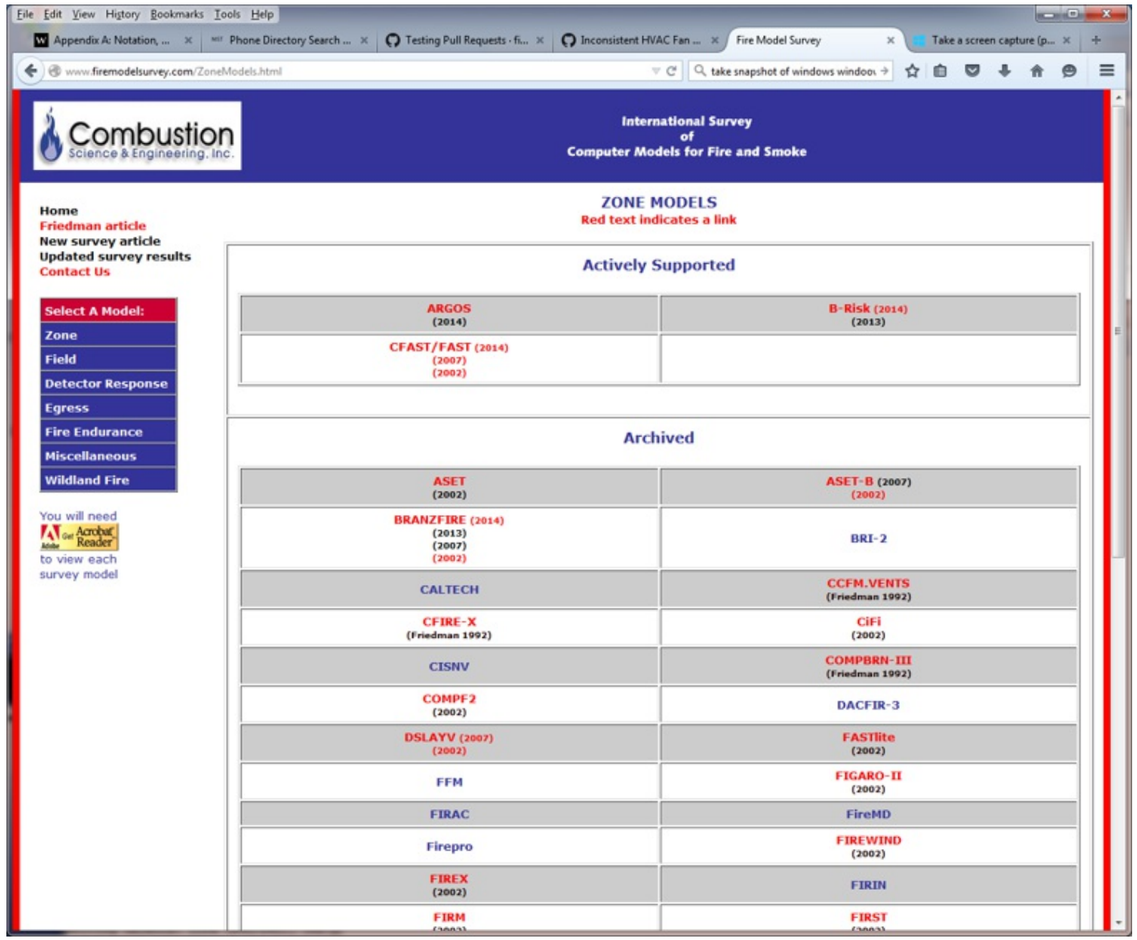
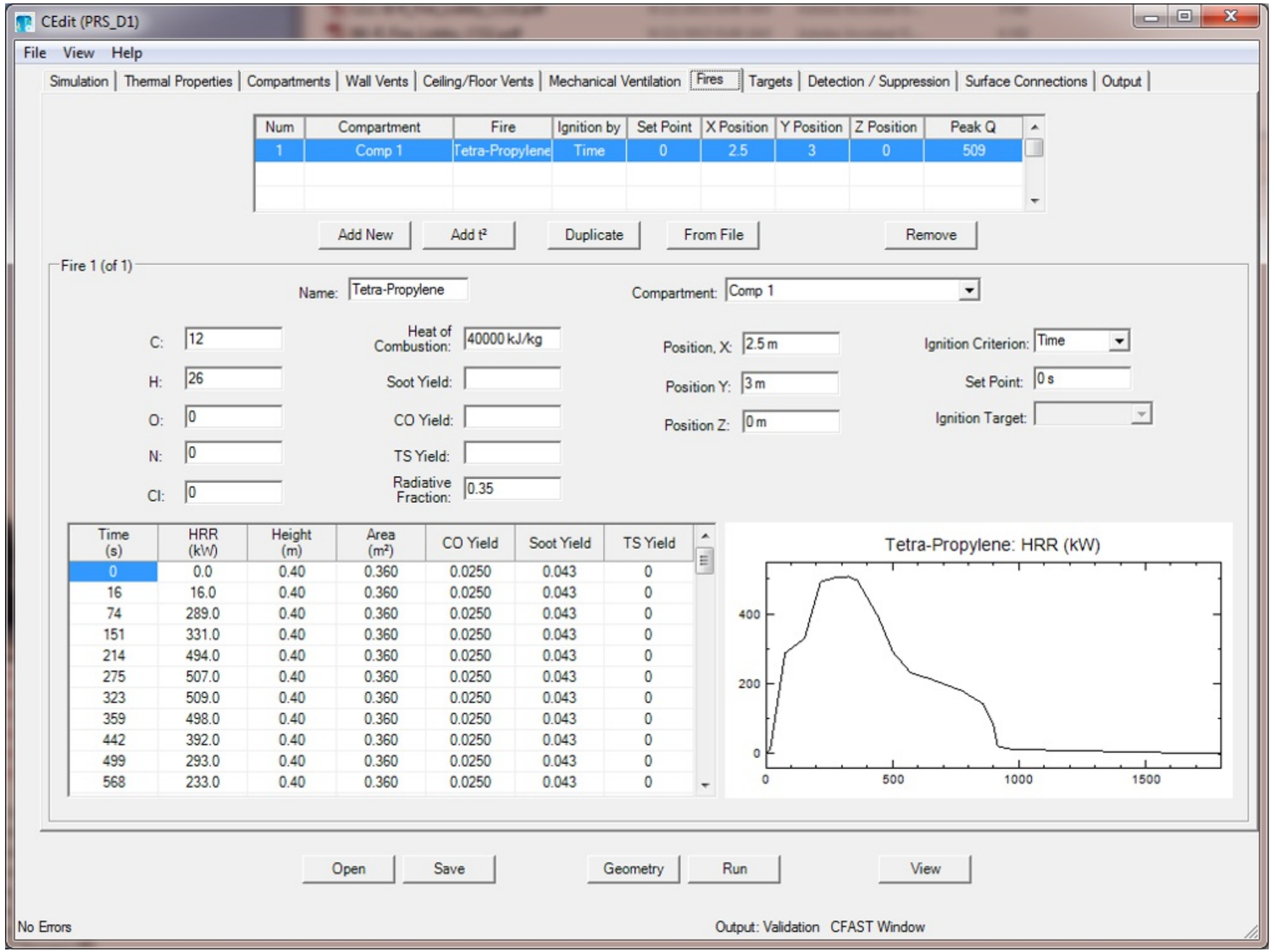
Fire Model Survey

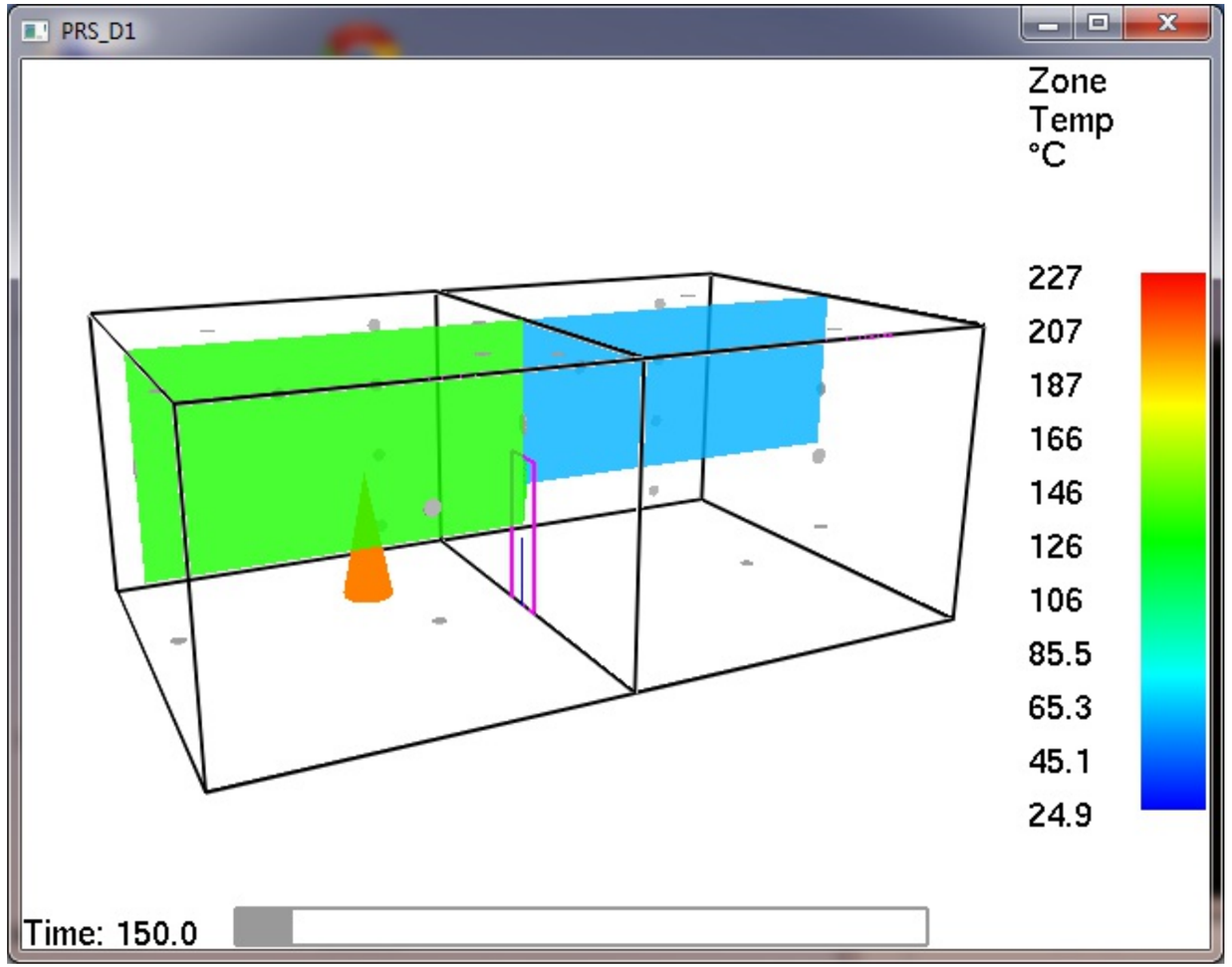
Courtesy, Combustion Science and Engineering



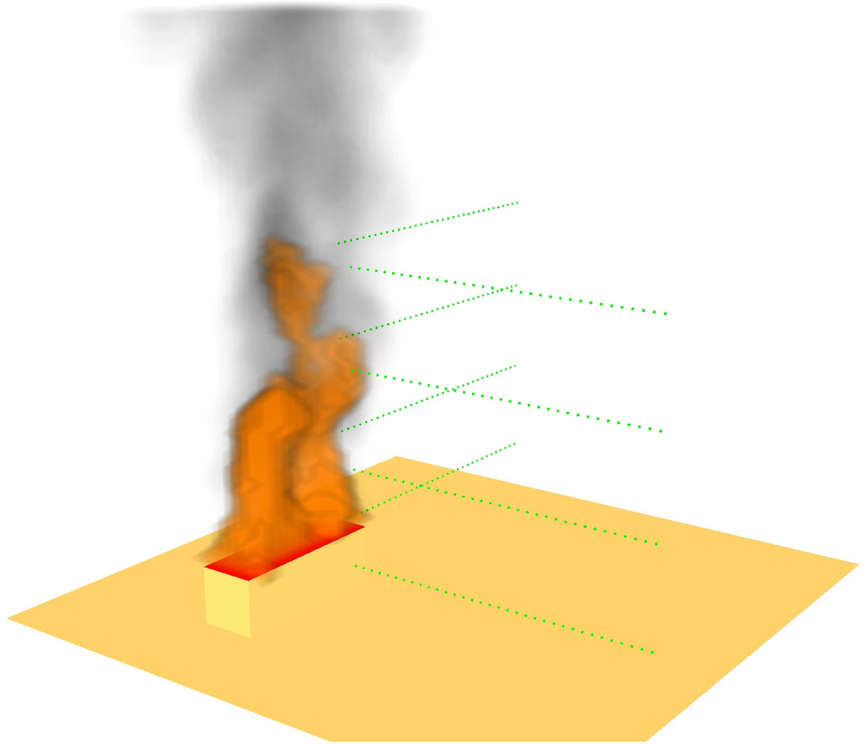
CFAST Graphical User Interface



CFAST in Smokeview

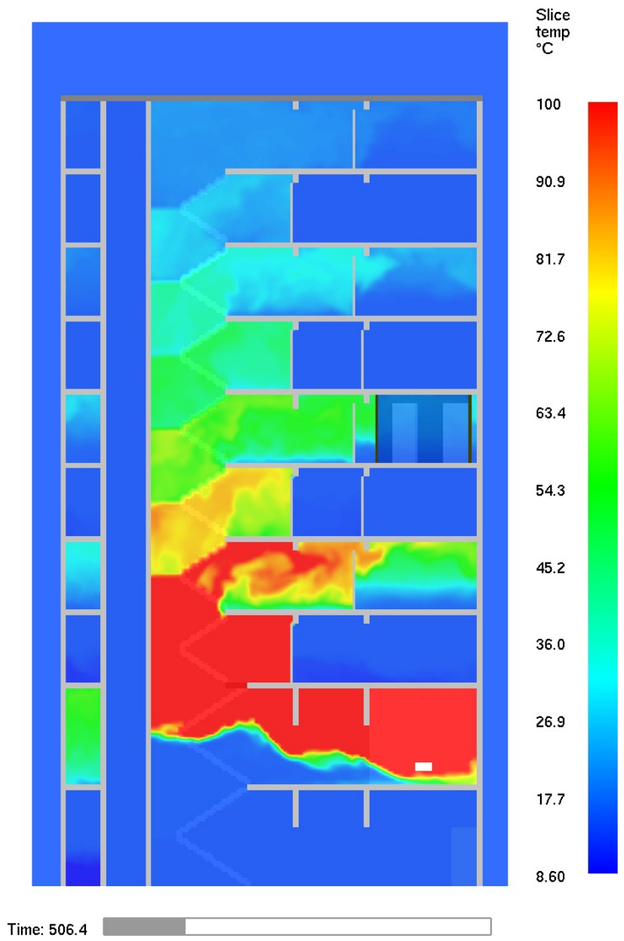


Radiation Measurements



Rob Fleury and Mike Spearpoint
U of Canterbury, New Zealand

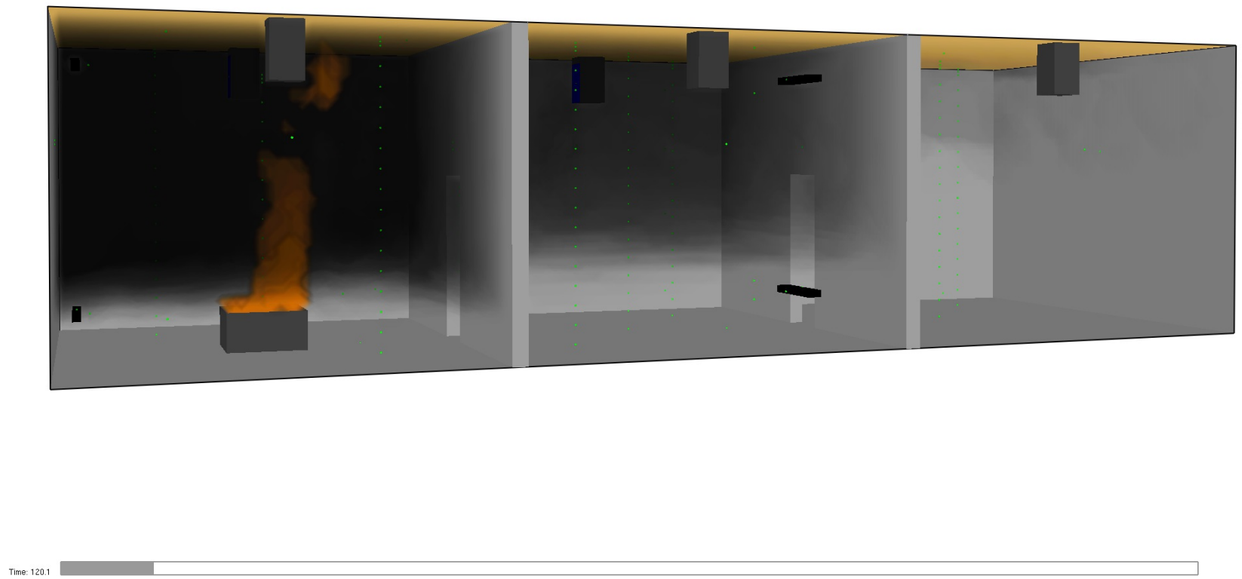
Smoke Movement in Stairwells



Modeling:
Paul Tyson, U of Ulster

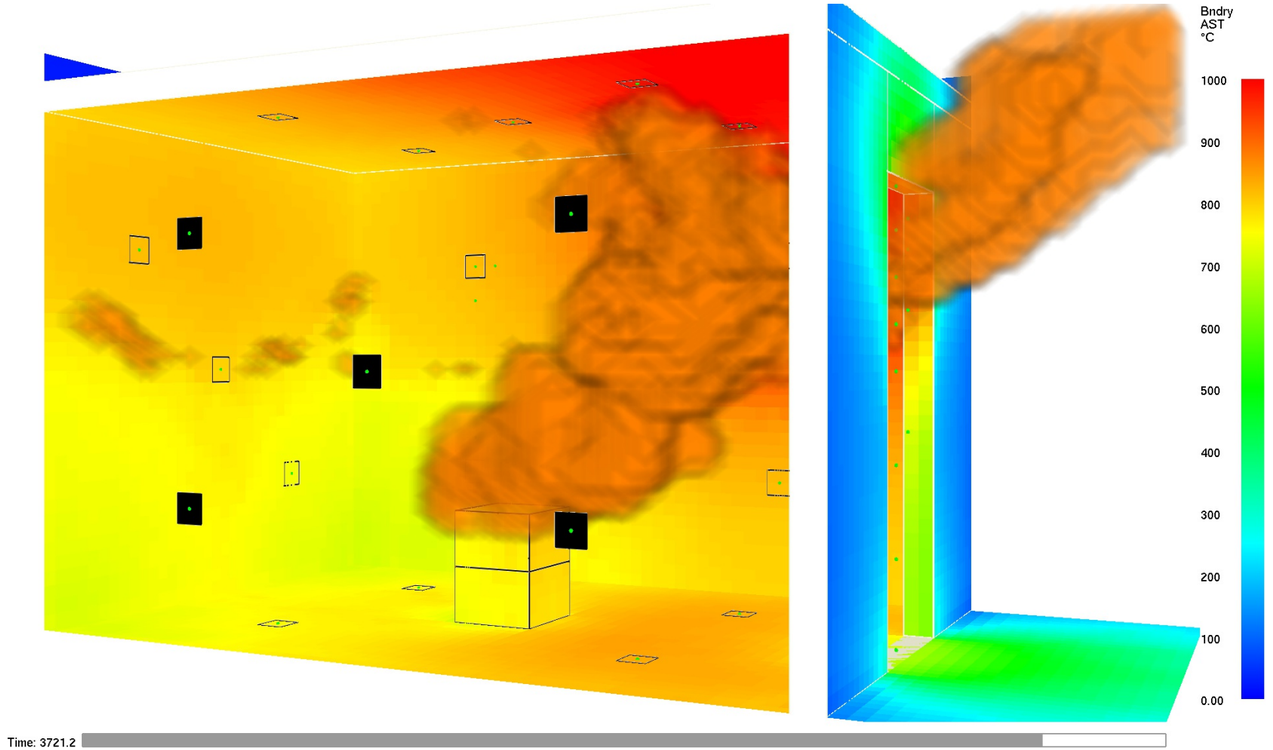
Experiments:
Cathy Wang, National Research Council, Canada

Ventilation Effects



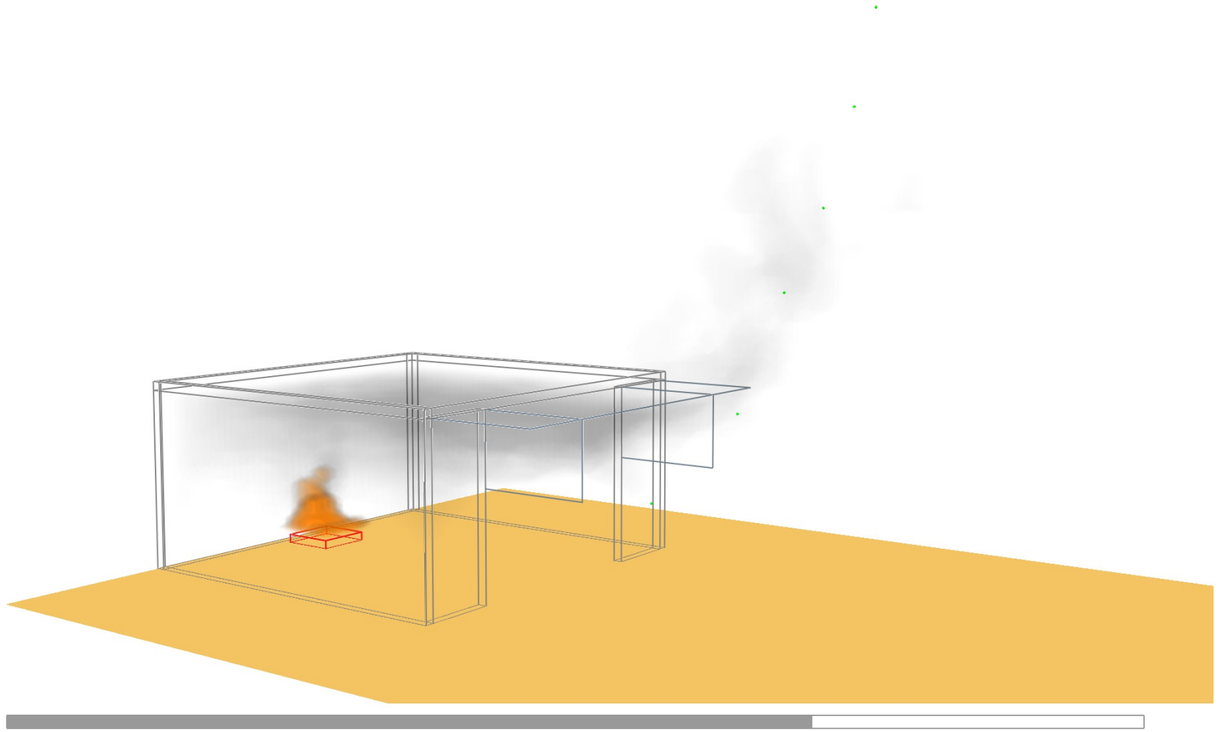
Modeling: Jonathan Wahlqvist, Simo Hostikka, Topi Sikanen
Experiments: OECD PRISME Project

Adiabatic Surface Temperature and Plate Thermometers



Modeling: J. Sjöström, U. Wickström, A. Byström
Experiments: SP Sweden

Spill Plumes



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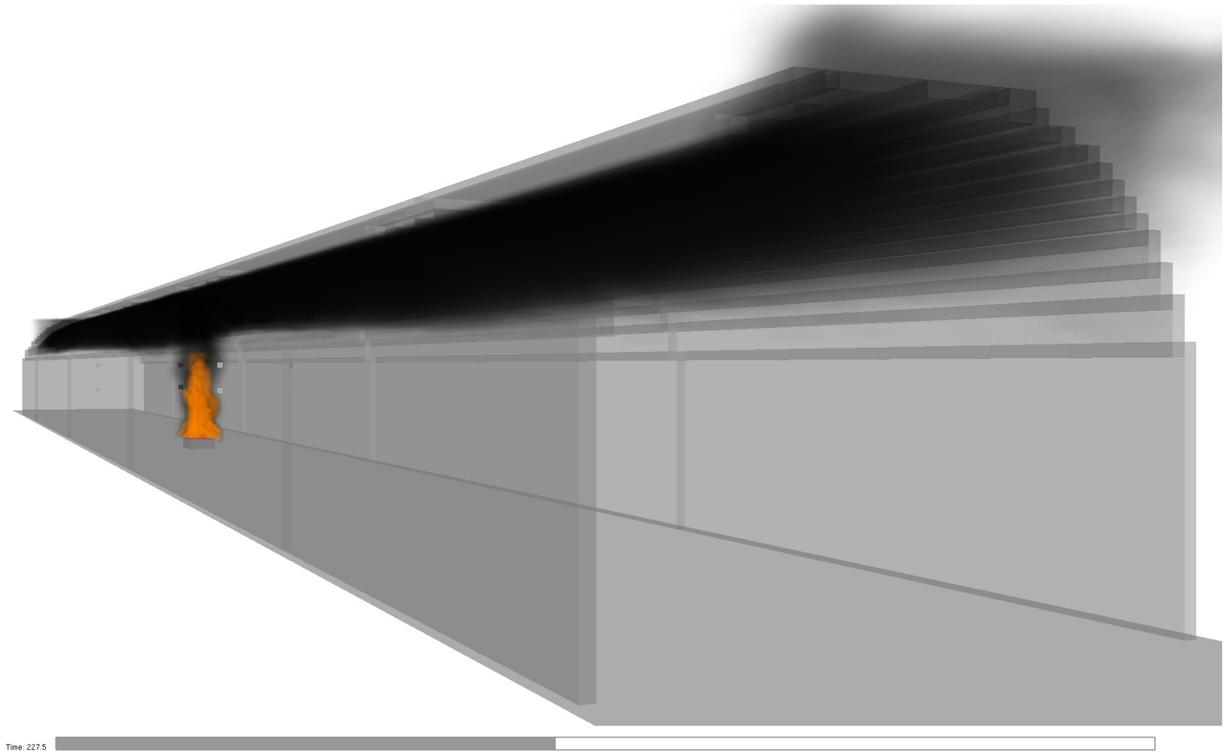
Tunnel Fires



Gabriele Vigne and Jimmy Jönsson, ArupFire

FDS Validation Guide

Table 15.1: Summary statistics for all quantities of interest

Quantity	Section	Datasets	Points	$\tilde{\sigma}_E$	$\tilde{\sigma}_M$	Bias
HGL Temperature, Forced Ventilation	5.16	5	132	0.07	0.20	1.15
HGL Temperature, Natural Ventilation	5.16	11	191	0.07	0.07	1.05
HGL Temperature, No Ventilation	5.16	3	32	0.07	0.12	1.16
HGL Depth	5.16	10	198	0.05	0.05	1.04
Ceiling Jet Temperature	7.1.17	17	947	0.07	0.14	1.05
Plume Temperature	6.1.7	8	107	0.07	0.16	1.18
Oxygen Concentration	9.1.9	8	160	0.08	0.15	0.99
Carbon Dioxide Concentration	9.1.9	9	157	0.08	0.12	0.99
Smoke Concentration	9.2.2	1	14	0.19	0.60	2.54
Compartment Over-Pressure	10.6	4	75	0.17	0.17	0.91
Target Temperature	11.2.6	7	1258	0.07	0.17	1.02
Surface Temperature	11.1.7	5	1009	0.07	0.13	1.04
Target Heat Flux	12.2.5	5	348	0.11	0.26	0.99
Surface Heat Flux	12.1.10	7	633	0.11	0.22	0.99
Velocity	8.10	7	222	0.08	0.09	0.99
Sprinkler Activation Time	7.2.1	5	232	0.06	0.16	0.95
Smoke Detector Activation Time	7.3	1	142	0.27	0.27	0.58
Smoke Detector Activation Time, Temp. Rise	7.3	1	142	0.33	0.33	1.02
Cable Failure Time	11.2.7	1	35	0.12	0.15	1.14
Sprinkler Actuations	7.2.2	3	38	0.15	0.30	0.87
Burning Rate	14.8	3	47	0.08	0.39	1.01
Carbon Monoxide Concentration	9.3.5	5	69	0.19	0.41	0.93