

# Computer Models For Fire and Smoke

<i>Model Name:</i>	JET
<i>Version:</i>	3.6
<i>Date:</i>	2007
<i>Classification:</i>	One-room zone model with sprinkler operation
<i>Very Short Description:</i>	Computes parameters of the hot layer during a fire and time of sprinkler activation– part of FIREWIND collection.
<i>Modeler(s), Organization(s):</i>	Victor O. Shestopal, Fire Modelling & Computing, Sydney, Australia
<i>User's Guide:</i>	Manual of FIREWIND
<i>Technical References:</i>	Manual of FIREWIND
<i>Validation References:</i>	Shestopal V.O. & Grubits S.J. "Computer program for an uninhibited smoke plume and associated computer software. Fire Technology, v. 29, No. 3, 1993, p. 246-267. Shestopal V.O. Sprinkler activation submodel for a zone-model computer program. SAFE '99 Int. Seminar on Safety & Fire Engineering, Cochin, India, Nov. 24-26, 1999, 73-88.
<i>Availability:</i>	Distributed by Fire Modelling & Computing by e-mail
<i>Price:</i>	\$Aus400, or \$US350
<i>Necessary Hardware:</i>	Microsoft WINDOWS
<i>Computer Language:</i>	C
<i>Size:</i>	Less than 1 MB
<i>Contact Information:</i>	FIRE MODELLING & COMPUTING, phone +61 2 9487 4858 fax +61 2 9487 4868, e-mail firecomp@optusnet.com.au, address 66 Westbrook Avenue, Wahroonga, NSW 2076 Australia

*Detailed Description:*

Evacuation model WAYOUT computes traffic flow in emergency situations from multi-room and multi-storey buildings. Only merging traffic flows are considered. In case of branching flows, a user is supposed to draw watersheds to divide the flows and compute them separately.

The model is based on a non-linear flow algorithm utilizing an experimentally obtained speed – density dependence by Predtechenskii & Mininskii. The model includes a trend of the pedestrian flow to jump into the maximum-density mode when the flow intensity reaches a critical value.

Verification of the model against available test data has been made and points to a slightly conservative character of the computed results.