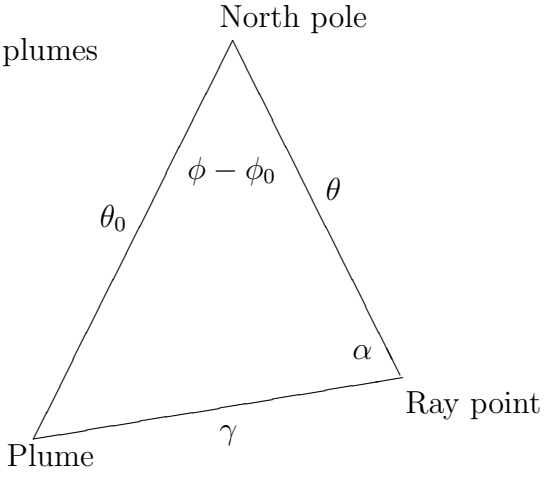
FORM TO SPECIFY INPUT DATA FOR
TEMPERATURE-PERTURBATION MODEL TPLUME[1]

An increase (or decrease) in temperature at two plumes localized at specified longitudes and latitudes.



$T(r, \theta, \phi) = T_0(r, \theta, \phi) + \Delta T(z) F(\frac{\gamma(\theta,\phi)}{W(z)})$,
$F(x) \equiv e^{-a_2 x^2 - a_4 x^4 - a_6 x^6 - a_8 x^8}$, or
$F(x) \equiv e^{-x^2}$ when $a_2 = a_4 = a_6 = a_8 = 0$.
$\cos\gamma = \sin\lambda_0 \cos\theta + \cos\lambda_0 \sin\theta \cos(\phi - \phi_0)$, or

$\cos\gamma = \sin\lambda_1 \cos\theta + \cos\lambda_1 \sin\theta \cos(\phi - \phi_1)$,

$\theta_0 = \pi/2 - \lambda_0$, $\theta_1 = \pi/2 - \lambda_1$, $z = r - r_e$,

where r_e is the Earth radius, r is the radial coordinate of the ray point, and $\gamma(\theta, \phi)$ is the central Earth angle from the center of the plume. The strength of the perturbation $\Delta T(z)$ and the width of the perturbation $W(z)$ are specified functions of height. This model represents the strength and width profiles each by a sequence of linear segments that are smoothly joined by hyperbolic functions (described on the input parameter form for model TTANH5).

Specify–
the model check for TPLUME = 5.0 (w225)
the input data-format code = _____(w226)
an input data-set identification number = _____(w227)
an 80-character description of the model with parameters:
_____
the latitude of the first plume, λ_0 = _____rad, deg, km N (w228)
the longitude of the first plume, ϕ_0 = _____rad, deg, km E (w229)
the latitude of the second plume, λ_1 = _____rad, deg, km N (w230)
the longitude of the second plume, ϕ_1 = _____rad, deg, km E (w231)
a_2 = _____(w232), a_4 = _____(w233), a_6 = _____(w234), a_8 = _____(w235)
and the profile values: the number of points in the profile -2 = n = _____
the profile:

	strength $\Delta T(z)$			width $W(z)$		
i	z_i (km,m)	ΔT_i (Kelvin)	δ_i (km,m)	z_i (km,m)	W_i (rad,deg)	δ_i (km,m)

[1]OTHER MODELS REQUIRED: Any background temperature model. SUBROUTINE FTANH, SUBROUTINE GAMANG, and FUNCTION ALCOSH.