

FORM TO SPECIFY INPUT DATA FOR SOUND-SPEED
PERTURBATION MODEL CBLOB4

An increase (or decrease) in squared sound speed in up to three localized regions that decays in a Gaussian manner in all three spatial directions.

$$C^2(r, \theta, \phi) = C_0^2(r, \theta, \phi) \left\{ 1 + \sum_{i=1}^n \Delta_i \exp \left[- \left(\frac{z-z_i}{W_{zi}} \right)^2 - \left(\frac{\theta-\theta_i}{W_{\theta i}} \right)^2 - \left(\frac{\phi-\phi_i}{W_{\phi i}} \right)^2 \right] \right\}$$

$C_0(r, \theta, \phi)$ is a background sound-speed model, (r, θ, ϕ) are Earth-centered spherical-polar coordinates. $z = r - r_e$, where r_e is the Earth's radius.

$\lambda_i = \pi/2 - \theta_i$ is the latitude.

Specify--

the model check number for subroutine CBLOB4 = 4. (W175)

the input data format code = (W176)

an input data set identification number = (W177)

an 80-character description for the sound-speed perturbation model, including description of parameter set:

the number of Gaussian blobs, n = (W178)

Δ_1 = (W179), Δ_2 = (W180), Δ_3 = (W181)

z_1 = (W182), z_2 = (W183), z_3 = (W184)

θ_1 = (W185), θ_2 = (W186), θ_3 = (W187) rad, deg, km N

ϕ_1 = (W188), ϕ_2 = (W189), ϕ_3 = (W190) rad, deg, km E

* W_{z1} = (W191), W_{z2} = (W192), W_{z3} = (W193) km

* $W_{\theta 1}$ = (W194), $W_{\theta 2}$ = (W195), $W_{\theta 3}$ = (W196) rad, deg, km

* $W_{\phi 1}$ = (W197), $W_{\phi 2}$ = (W198), $W_{\phi 3}$ = (W199) rad, deg, km

OTHER MODELS REQUIRED: None.

*Setting a $W = 0$ results in no space variation in that direction.