algorithmic_cv	Algorithmic Control Variables: KEYWORDS	*This block is optional if all default values are used*	
Variable type	*Variable name*	*Default*	*Description*
double precision	structural_conv	0.001	Structural parameter convergence values
double precision	phi_conv	0.001	Objective function convergence value
double precision	bga_conv	0.001	BGA outer loop convergence value
integer	it_max_structural	10	Max number of iterations for struct parameters
integer	it_max_phi	10	Max number of iterations for objective function
integer	it_max_bga	10	Max number of iterations for BGA
integer	linesearch	0	Linesearch procedure flag: [0] not perform [1] perform
integer	it_max_linesearch	10	Max number of iterations for linesearch procedure
integer	theta_cov_form	0	Form of theta covariance: [0] none, [1] diag, [2] full matrix
integer	deriv_mode	0	derivatives (Jacobian) calculation method: [0] make PEST files internally, [1] use secondary command line argumern (typically adjoint state)
integer	posterior_cov_flag	0	[0] do not calculate posterior covariance, [1] calculate posterior covariance.
character, len = 6	jacobian_format	"binary"	Two options for how the Jacobian matrix calculated by an external code is communicated to bgaPEST: binary means a jco file, ascii means a text file
character(len=100)	jacobian_file	scratch.jco	Jacobian File
integer	par_anisotropy	0	Anisotropy flag: [0] no anistropy, [1] anisotropy
integer	Q_compression_flag	0	[0] none - calculate full Q0, [1] Calculate Q0 for each beta separately and if nugget store just 1, if toep_flag store just a vector
prior_mean_cv	Prior Mean Control Variables: KEYWORDS		
Variable type	*Variable name*	*Default*	*Description*
integer	prior_betas	0	Have or not prior informations about mean? [0] No - [1] Yes
integer	beta_cov_form	0	Form of Beta covariance: [0] none, [1] diag, [2] full matrix
prior_mean_data	Beta Association Data: TABLE		
Variable type	*Variable name*	*Defaults*	*Description*
integer	BetaAssoc	-	Integer identifiers of beta associations
character(len=100)	Partrans	-	Vector of parameter transformation : [NONE] or[LOG]. (Not case sensitive)
double precision	beta_0	-	Prior beta values
double precision	beta_cov_i i = 1, p	-	Covariance of beta
structural_parameter_cv	Structural Parameter Control Variables: TABLE		
Variable type	*Variable name*	*Default*	*Description*
integer	BetaAssoc	-	Integer identifiers of beta associations
integer	prior_cov_mode	1	Supplied matrix [0] or calculated [1].
integer	var_type	1	Type of variogram [0] pure nugget, [1] linear, [2] exponential
integer	struct_par_opt	1	Structural parameters optimization: [0] No optimization, [1] Optimization
integer	trans_theta	1	Transformation of structural parameters in the estimation space (power transform): [0] No, [1] Yes
double precision	alpha_trans	50	Exponent of power transformation in case of trans_theta
structural_parameter_data	Structural Parameter Data: TABLE		
Variable type	*Variable name*	*Default*	*Description*
integer	BetaAssoc	-	Integer identifiers of beta associations
double precision	theta_0_1	-	Initial value of theta 1 value
double precision	theta_0_2	-	Initial value of theta 2 value -- negative if not used
structural_parameter_cov	Structural Parameter Data: TABLE		
Variable type	*Variable name*	*Default*	*Description*
integer	BetaAssoc	-	Integer identifiers of beta associations
double precision	theta_cov_i i=1,…,max(num_thata_type)	-	Theta covariance matrix
epistemic_error_term	Epistemic Error Term: KEYWORDS		
Variable type	*Variable name*	*Defaults*	*Description*
double precision	sig_0	-	Initial value of sigma (epistemic uncertainty parameter)
integer	sig_opt	-	Optimization for sigma: [0] No, [1] Yes
double precision	sig_p_var	0	Prior variance on sigma
integer	trans_sig	0	Transformation of epistemic error in the estimation space (power transform): [0] No, [1] Yes
double precision	alpha_trans_sig	50	Exponent of power transformation in case of trans_sig

parameter_cv	Parameter Control Variables: KEYWORDS		
Variable type	*Variable name*	*Defaults*	*Description*
integer	ndim	-	Spatial dimensions for parameters (1 if temporal only)

Q_compression_cv	Prior Covariance Compression Control Variables: TABLE		
Variable type	*Variable name*	*Defaults*	*Description*
integer	BetaAssoc	-	Integer identifiers of beta associations
integer	Toep_flag	-	Using Toeplitz matrix for Qss. [0] No, [1] Yes
integer	Nrow	-	Number of model rows
integer	Ncol	-	Number of model columns
integer	Nlay	-	Number of model layers

parameter_groups	Parameter Groups: TABLE		
Variable type	*Variable name*	*Defaults*	*Description*
character (len=50)	groupname	-	Name of the parameter groups

parameter_data	Parameter Data: TABLE		
Variable type	*Variable name*	*Defaults*	*Description*
character (len=50)	GroupName	-	Name of group
double precision	StartValue	-	Starting values of parameters
character (len=50)	ParamName	-	Name of parameter
double precision	x1	-	Location in first dimension (time if a time series)
double precision	x2	-	Location in second dimension (read if ndim >= 2)
double precision	x3	-	Location in third dimension (read if ndim >= 3)
integer	SenMethod	-	Sensitivity calculation method
integer	BetaAssoc	-	Beta association

observation_groups	Observation Groups: TABLE		
Variable type	*Variable name*	*Defaults*	*Description*
character (len=50)	groupname	-	Name of the observation groups

observation_data	Observation Data: TABLE		
Variable type	*Variable name*	*Defaults*	*Description*
character (len=50)	GroupName	-	Name of groups
double precision	ObsValue	-	Vector of observations
character (len=50)	ObsName	-	names of observations
double precision	Weight	-	Weight for R matrix

model_command_lines	Model Command Lines: KEYWORDS		
Variable type	*Variable name*	*Defaults*	*Description*
character (len=50)	Command	-	Command line
character (len=50)	DerivCommand	-	derivative Command line

model_input_files	Model Input Files: TABLE		
Variable type	*Variable name*	*Defaults*	*Description*
character(len=100)	TemplateFile	-	Template file
character(len=100)	ModInFile	-	Input file

model_output_files	Model Input Files: TABLE		
Variable type	*Variable name*	*Defaults*	*Description*
character(len=100)	InstructionFile	-	Instruction file
character(len=100)	ModOutFile	-	Output file

parameter_anisotropy	Parameter Anisotropy: TABLE	***This block is optional if parameter anisotropy is not used***	
Variable type	*Variable name*	*Defaults*	*Description*
integer	BetaAssoc	-	Integer identifiers of beta associations
double precision	horiz_angle	-	angle, in degrees, of principal anisotropy direction
double precision	horiz_ratio	-	Ratio of maximum to minimum principal property values in the horizontal plane
double precision	vertical_ratio	-	Ratio of maximum to minimum principal property values in the vertical direction (read only if ndim=3)