

APPENDIX 2.2.6. CHARACTERISTICS OF THE GLOBAL ENSEMBLE PREDICTION SYSTEM

1. Ensemble System	
Ensemble name (Version)	CMA-GEPS V1.3
Date of implementation	22 Sep 2022
2. EPS Configuration	
Horizontal resolution (Grid spacing)	0.5 degree
Vertical resolution (model top)	87 layers top at 0.1hPa
Forecast length (initial time)	15 days (00 and 12 UTC)
Members	31
Coupling to ocean/wave/sea ice models	No
Integration time step	600 seconds
3. Initial conditions and perturbations	
Initial perturbation strategy	Singular vectors (SVs)
Optimization time in forecast	48 h
Initial perturbed area	Northern Hemisphere extra-tropics (30°N–80°N); Southern Hemisphere extra-tropics (30°S–80°S) ; Up to 6 regions targeted on tropical cyclone
Data assimilation method for control analysis	4D-Var
Initial conditions for perturbed members	4D-Var analysis
4. Model uncertainty perturbations	
Model physics perturbations	Stochastically perturbed physics tendencies (SPPT) scheme
Model dynamics perturbations	Stochastic kinetic energy backscatter (SKEB) scheme
5. Surface boundary perturbations	
SST perturbations	None
Soil moisture perturbations	None
Surface wind stress/roughness perturbations	None
Other surface perturbations	None
6. Other details	
Soil scheme	The Common Land model (CoLM)
Radiation	Rapid Radiative Transfer Model (RRTG) for longwave and shortwave radiation scheme
Large-scale dynamics	The grid-point semi-Lagrangian method is used for non-hydrostatic model
Boundary layer parameterization	the new medium-range forecast (NMRF) PBL scheme
Convection parameterization	the new simplified Arakawa–Schubert (NSAS) shallow and deep convection scheme
Cloud scheme	The modified two-moment cloud scheme

7. Products	
Method of the calculation (if not unique)	Standard ensemble products
8. Further information	
Operational contact point	hujk@cma.gov.cn
URLs for system documentation	http://www.wmc-bj.net
URL for list of products	http://www.wmc-bj.net

Note: WMO-NO.485 APPENDIX 2.2.6.