### Checklist of characteristics of global climate reanalysis systems described in Appendix B

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| Information | Link to URL and/or supporting information  (filled by the centre) | Confirmation of the provided information  Yes or no with comments if no (filled by the review team) |
| **1. System** | | |
| System name (version) | The First-Generation CMA Global Reanalysis (CMA-RA) | Yes |
| Date of implementation | Dec, 2020 | Yes |
| **2. Configuration** | | |
| Earth system components included in the analysis system (e.g., ocean, sea-ice, land, etc.) | Atmospheric and land components were included. | Yes |
| Horizontal resolution of the model, with indication of grid spacing in km (for the different Earth system component included in the model) | Roughly 34km for both atmospheric and land component. | Yes |
| Number of levels in the different Earth system components (for the different Earth system component included in the model) | 64 levles for atmosphere, and 4 layers for land | Yes |
| Frequency of the outputs | 6 hourly | Yes |
| Top of the atmospheric model | 0.27 hPa | Yes |
| Number of analysis cycle per day | 4 | Yes |
| Earliest start date | Jan 1st, 1979 | Yes |
| Integration time step | 900s | Yes |
| Length and frequency of the longest forecast | 9 hour forecast 6 hourly | Yes |
| Dataset latency | 3-day for atmosphere and 1 week for land. | Yes |
| Additional comments |  | Yes |
| **3. Analysis system** | | |
| Data assimilation method | 3DVar with FGAT (First Guess at Appropriate Time) for atmosphere.  EnOI for screen level analysis. | Yes |
| Length of the analysis window | 6 hour | Yes |
| Number of ensemble members and their resolution | No ensemble used. The analysis resolution is same as the forecast (~ 34km). | Yes |
| Additional comments |  | Yes |
| **4. Externally** **prescribed boundary conditions** | | |
| Sea surface temperature | Daily SST from CFSR for the period from 1979 to 2014. Daily Real-Time Global SST(RTG SST) for years from 2015 | Yes |
| Sea-ice | Daily sea ice from CFSR for the period from 1979 to 2014. Daily sea ice analysis from NCEP for years from 2015 | Yes |
| Snow | Weekly snow climatology for atmosphere model | Yes |
| Vegetation | MODIS-based vegetation type | Yes |
| Land use (and its evolution in time) | MODIS-based soil type | Yes |
| Aerosols | Monthly aerosols climatology | Yes |
| Green House Gases | observed variations in carbon dioxide (CO2) | Yes |
| Solar forcing | Annual solar constants | Yes |
| Additional comments |  | Yes |
| **5. Details of model** | | |
| Dynamical core (e.g., semi-Lagrangian | two time-level semi-implicit and semi-Lagrangian  time discretization | Yes |
| Grid structure | Linear Gaussian grid with a resolution of T574 (~34km) | Yes |
| Hydrostatic or nonhydrostatic | Hydrostatic | Yes |
| Radiations parameterization | The rapid radiative transfer models (RRTMG) | Yes |
| Boundary layer parameterization | Hybrid eddy-diffusivity mass-flux PBL parameterization | Yes |
| Convection parameterization | scale-aware parameterization | Yes |
| Cloud parameterization scheme | simple cloud microphysics parameterization | Yes |
| Land surface parameterization scheme | The Noah land surface model | Yes |
| Other relevant details |  | Yes |
| **6. Further information** | | |
| Operational contact point | Lipeng Jiang (jianglp@cma.gov.cn) | Yes |
| URL of the technical note/ reference paper | <http://jmr.cmsjournal.net/en/article/doi/10.1007/s13351-023-2086-x> | Yes |
| URL for list of products | <https://data.cma.cn/en/?r=data/index&cid=713f77e85a7f95e8> | Yes |
| **7. Observational data used** | | |
| URL with the list of observational data used in the reanalysis | Section 3 of <http://jmr.cmsjournal.net/en/article/doi/10.1007/s13351-023-2086-x> | Yes |
| DOI of data product if available | 10.12065/2.C.GLB.2019.8.v1 | Yes |
| **8. Other sources for data access, if available** | | |
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