Operational Configuration BAM model

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Table 1: Operational Configuration BAM model

Options	Descriptions	References
Dynamics	Eulerian/Semi-Lagragian	Barros S. R. 2000 and 2018
Tracers Advection	Semi-Lagragian	Barros S. R. 2013
Physics Unified (dry/humidity)	Time Integration	Kubota P. K(2017)
Radiation (short and long Wave)	Atmospheric (Cloud-Aerosol-radiation) interaction	CliRad (TARASOVA,2007)
Surface	Surface Process (energy balance)	IBIS-2.6-CPTEC(KUBOTA, 2012)
Gravity wave drag	Perturbation due the interaction of the gravity wave with flow atmospheric and topography	GMB (KIM; DOYLE, 2005)
Pluma térmica	Vertical diffusion due termal plume	THERMALCEL (RIO; HOURDIN, 2008)
Boundary layer	Vertical diffusion due turbulency process	PBLúmida (BRETHERTON; PARK, 2009)
Microphysics	Intrinsic Physical process to cloud formation	Morrison (MORRISON, 2005)
Shallow convection	Physical of Stratus cumulus formation	Tiedke (TIEDKE ,1989)
Deep Convection	Physical of Cumulus Convection precipitation	Arakawa Schubert simplificado calibrada no CPTEC (HAN; PAN., 2011)

Table 2: Key characteristics of the atmospheric component of CPTEC BAM

	Forecast / Analysis	Number of members	Horizontal resolution	Vertical levell	Pressure at model top (hPa)	Perturbation models
BAM->HRES (TQ0666L064) Atmospheric Model	Forecast 0–10 days	1	Native: **(gaussian) ~ 20km** Interpolated: (Linear) **0.2° ~20km**	64	0.01hPa	no
ENS Ensemble - Atmospheric Model	Forecast 0–15 day	15	Native: **(gaussian) ~ 100km** Interpolated: (Linear) **1.0° ~100km**	42	0.01hPa	yes
SEAS5 2019 Seasonal forecast	Forecast long-range forecast run monthly from 0 to 7 months	15	Native: **(gaussian) ~ 100km** Interpolated: (Linear) **1.0° ~100km**	42	0.01hPa	yes

Table 3: products in operational implementation.

	Forecast / Analysis	Number of members	Horizontal resolution	Vertical levell	Pressure at model top (hPa)	Perturbation models
SEAS5 Sub-Seasonal forecast	Forecast 16–46 days	10	Native [1] : **(gaussian) ~ 100km** Interpolated [2]: (Linear) **1.0° ~100km**	42	0.01hPa	yes
G3DVAR 3-Dimensional data assimilation	Analysis	*1*	**TQ0299L064** *resolution*	64	0.01hPa	no