Updates on 2018 HMON Ensemble real-time experiment

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HMON ENSEMBLE

- HMON ENS, 1 + 10

- Real time parallel for one AL storm

- Probabilistic guidance and mean track/intensity forecasts

- Provide results for multi-model ensembles

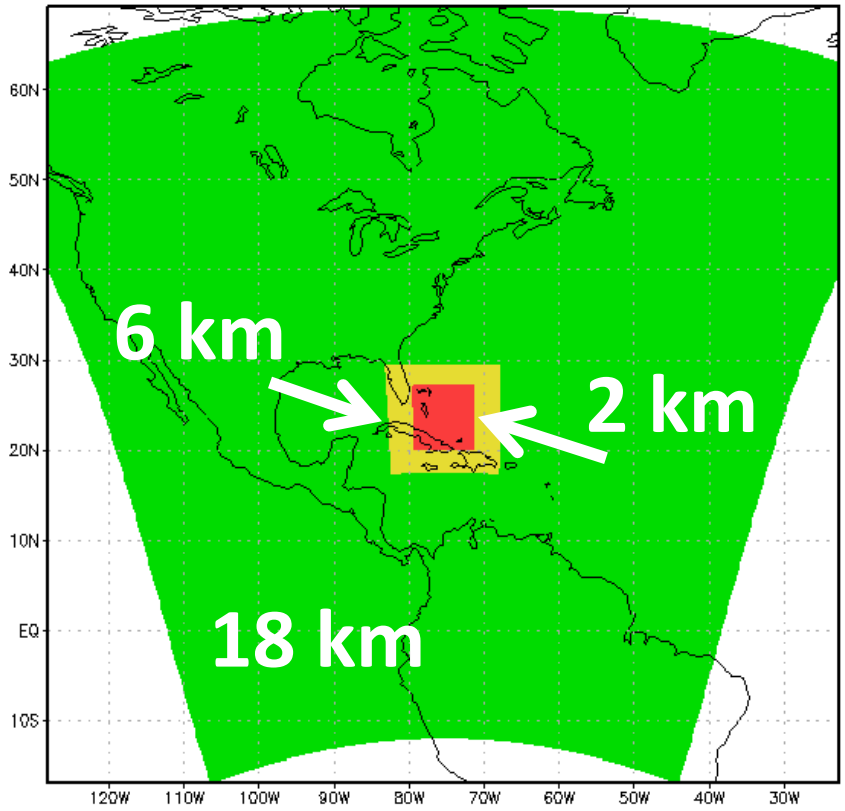
HMON

Hurricanes in a **M**ulti-scale **O**cean coupled **N**on-hydrostatic model

One of NCEP operational hurricane forecast systems

- Dynamic core: NMMB
- Vortex initialization
- Moving nests
- Well-tuned Physics package
- Coupled to Ocean models (HYCOM)

HMON configuration



- Coupled to HYCOM
- BC and IC from GFS
- 42 levels
- Three domains, two nests
- D1: ~65˚ x 65˚
  D2: ~ 12˚ x 12˚
  D3: ~ 7˚x 7˚

2018 HMON Ensemble Configuration

- Similar to 2018 operational deterministic HMON model:
  - Less vertical levels (42 vs 51) to fit jet time window
  - 10% larger domains than 2017 HMON_ENS

- IC/BC Perturbations (large scale): 10 member GEFS/FV3GFS.

- Random initial wind speed and position (TCVital) perturbations considering best track uncertainty

- Multi-phys Options in members:
  - Convection: BMJ, SAS, scale-aware SAS
  - PBL: GFSPBL, EDMFPBL
  - Land: GFDL, NOAH
  - Microphys: Fer_hires, WSM6
  - Surface layer: use different z0 and zt values (Cd,Ch)

- ~539 ujet nodes reserved.

Configurations for HMON ensemble members

	Domains	CU	PBL	Land	Cd,Ch	MP	Spec_adv
00	D1: 451x451 D2: 231x201 D3: 381x345 NZ=42 18 Km 6 Km 2 Km	SAS	GFSPBL	NOAH	ICOEF=10	Fer_hires	No
01		Scale_SAS	GFSPBL	NOAH	ICOEF=10	Fer_hires	No
02		BMJ	GFSPBL	NOAH	ICOEF=10	Fer_hires	No
03		BMJ	GFSPBL	GFDL	ICOEF=10	Fer_hires	Yes
04		SAS	GFSPBL	NOAH	ICOEF=10	WSM6	No
05		BMJ	EDMF	NOAH	ICOEF=10	Fer_hires	No
06		Scale_SAS	EDMF	GFDL	ICOEF=10	Fer_hires	
07		BMJ	EDMF	NOAH	ICOEF=10	WSM6	
08		Scale_SAS	EDMF	NOAH	ICOEF=10	Fer_hires	No
09		Scale_SAS	GFSPBL	NOAH	ICOEF=6	Fer_hires	Yes
10#		SAS	GFSPBL	NOAH	ICOEF=10	Fer_hires	No

use FV3GFS for IC and BC