New features for SHOP

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February 13, 2020

Overview I

The model has two big components:

- Analysis cycle:
  - Launch every 6h (12:00am, 6:00am, 12:00pm, 6:00pm)
  - Run in steady-state mode. Estimate average hydraulic variables in the last 24h.
  - Initial conditions: The model is initialed with the average hydrauclic variables estimated 24h ago.
  - Boundary conditions: Used observed hydraulic variables averagesd in the last 24h. Source of data: hydrometric data (CanHyS); water levels (SJR); wind data (HRDPS)
  - Domain: St. Lawrence river from Montreal to Trois-Rivieres.

Overview II

- Forescast cycle:
  - Launch every 6h
  - 54h forecast (6h analysis + 48h forecast)
  - I.C. and B.C. for the 6h analysis, see below (the analysis cycle is embeded in the forecast cycle for a different domain!)
  - Initial conditions for the 48h forecast: The model is initialed with the output of the previous 6h analysusis cycle.
  - Boundary conditions for the 48h forecast: from: Water Cycle Prediction System, SPINE, and HRDPS (wind fields)
  - Domain: St. Lawrence river from Carillon and Beauharnois to Saint-Joseph-de-la-Rive.

Maestro's model structure