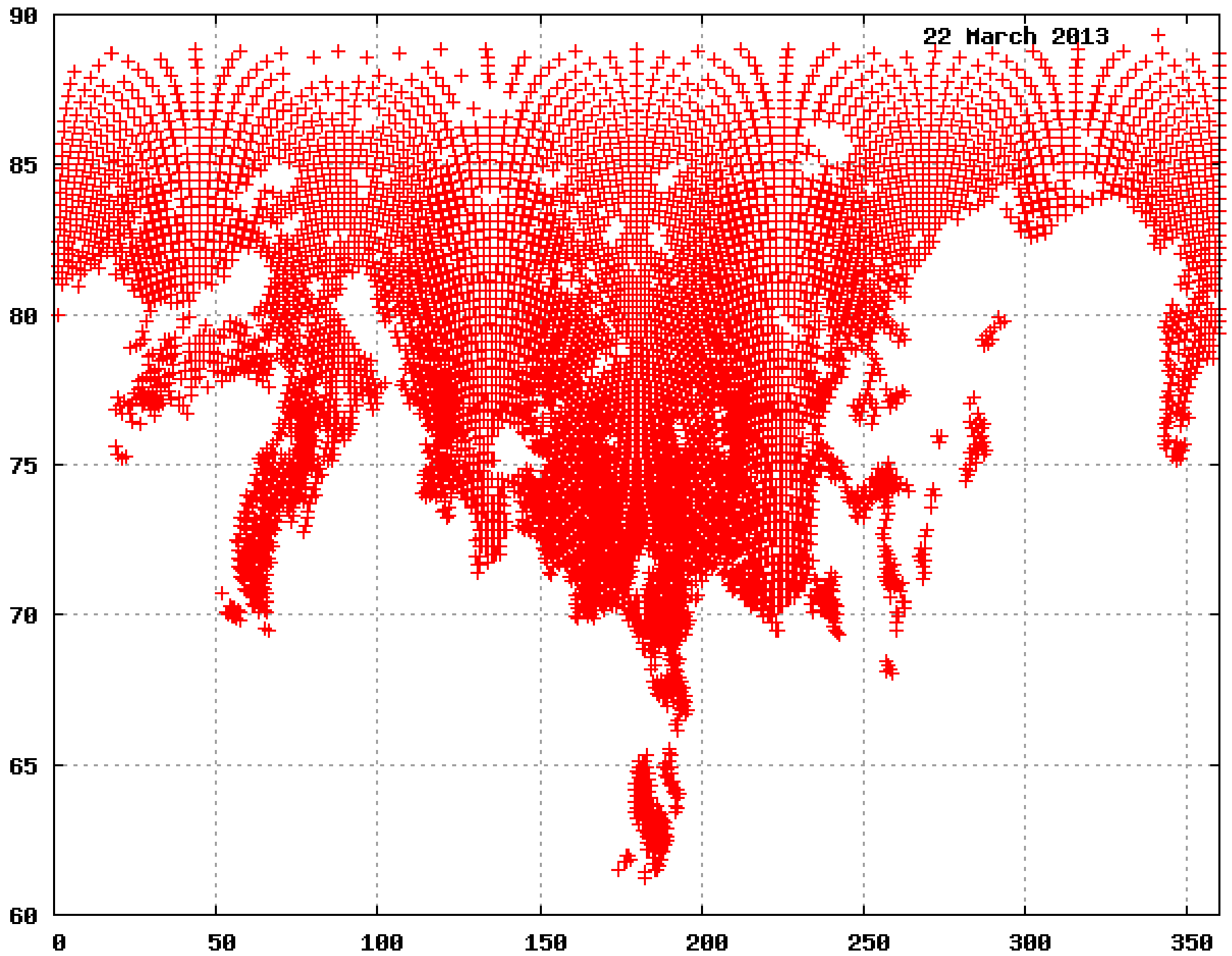


Ice Drift Verification + Ensembles

Robert Grumbine
Elliott Rebello

'Truth'

IABP	IFREMER
daily	3,6 daily
Year round*	Non-summer
Dozens of points	Thousands of points
Thick ice only	~30 km spacing
Buoy on floe	Satellite Feature Tracking

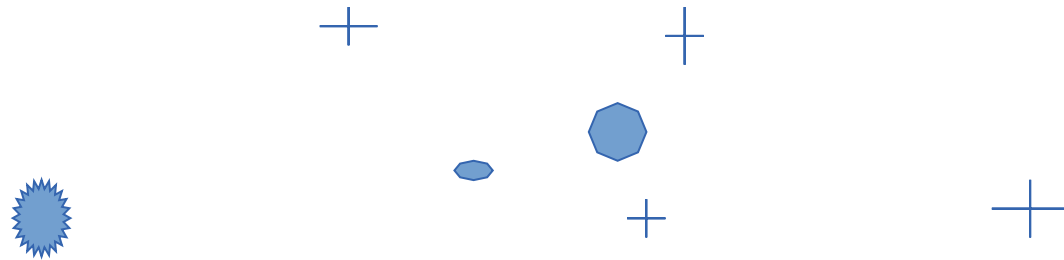


Drift Model

- Virtual Floes – assume a floe exists at point and then predict cumulative drift
- Accumulate days 1-16
- Mesh 381 km (for comparability to old)
- NEW: Ensemble forcing, average to best estimate

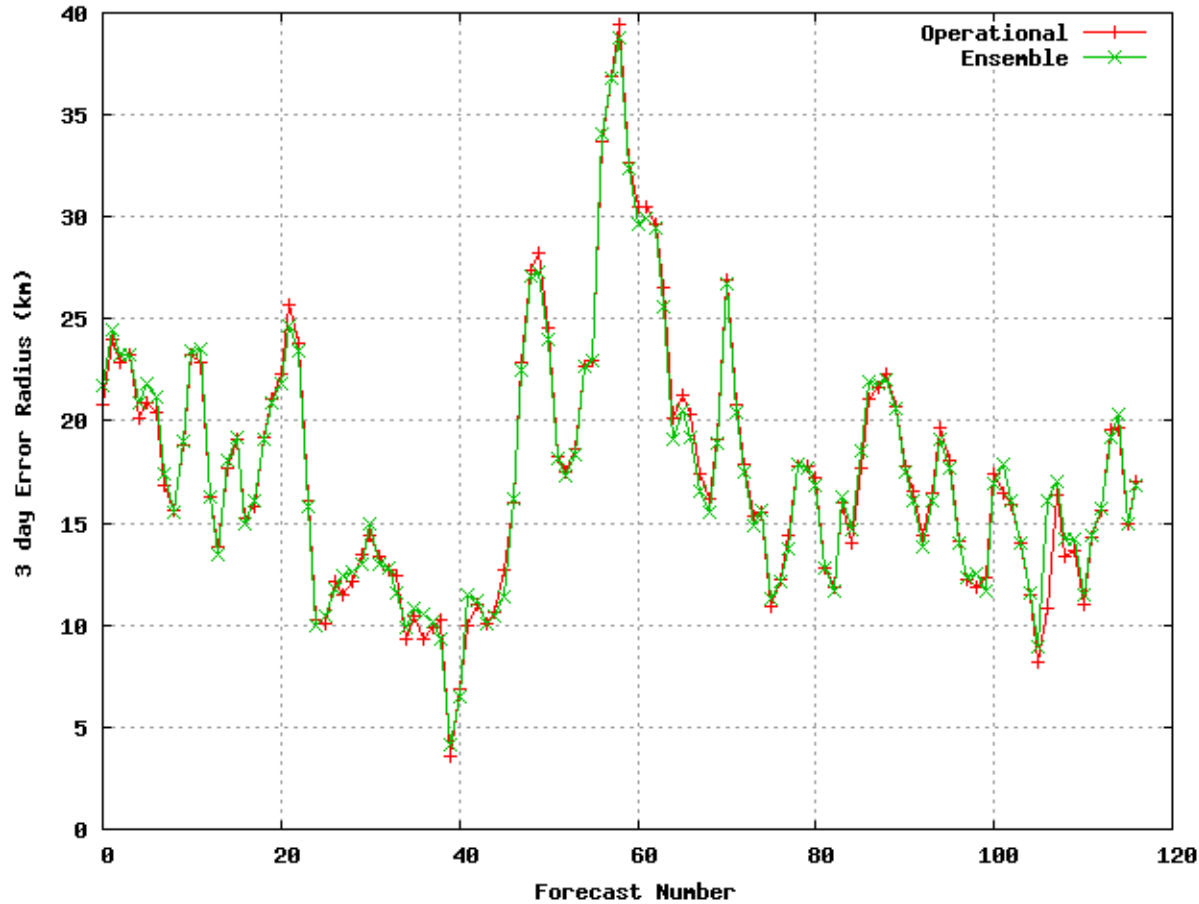
Ensemble Drifting

- Best estimate = point that minimizes total distance to all forecasts – on sphere



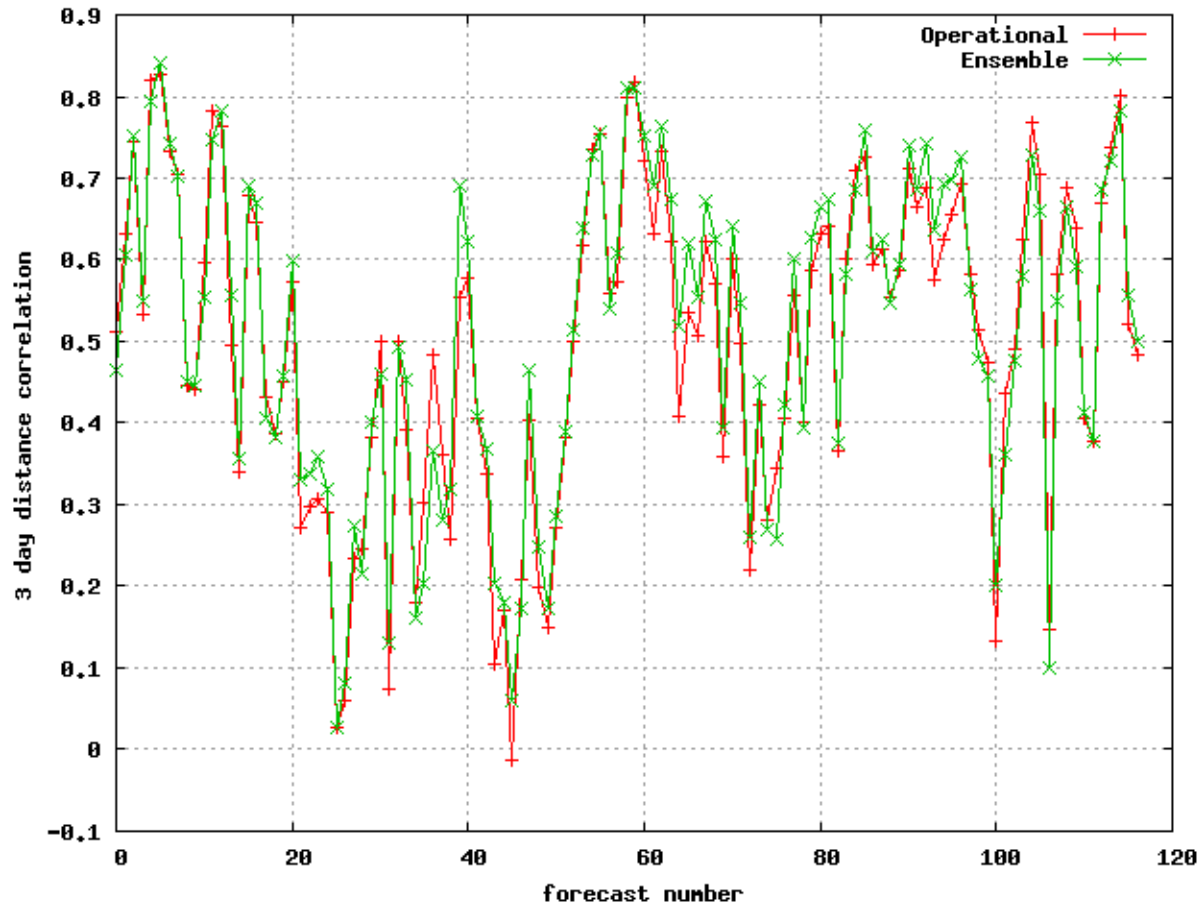
Error Radius Jan 1 – May 3, 2013

3 days



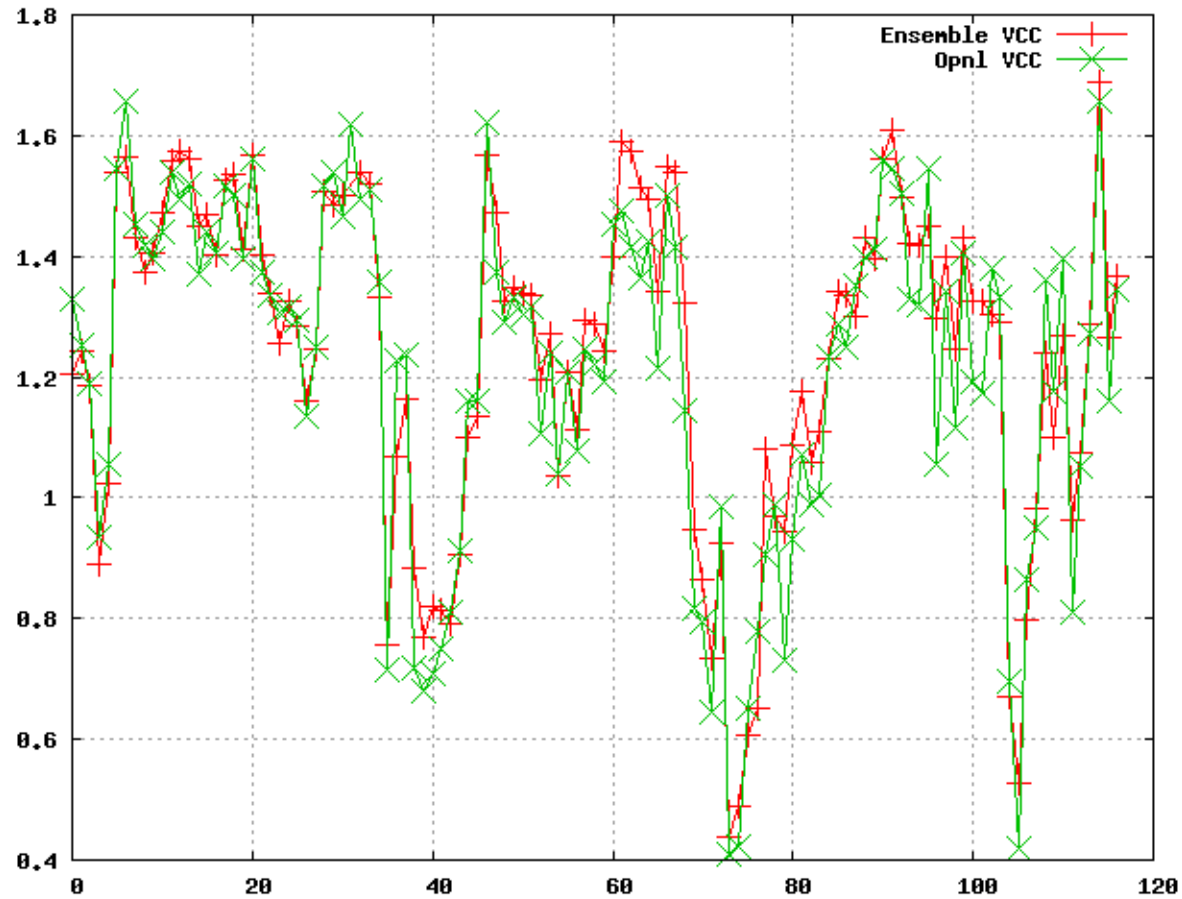
68-49 wins

Distance Correlation 3 days



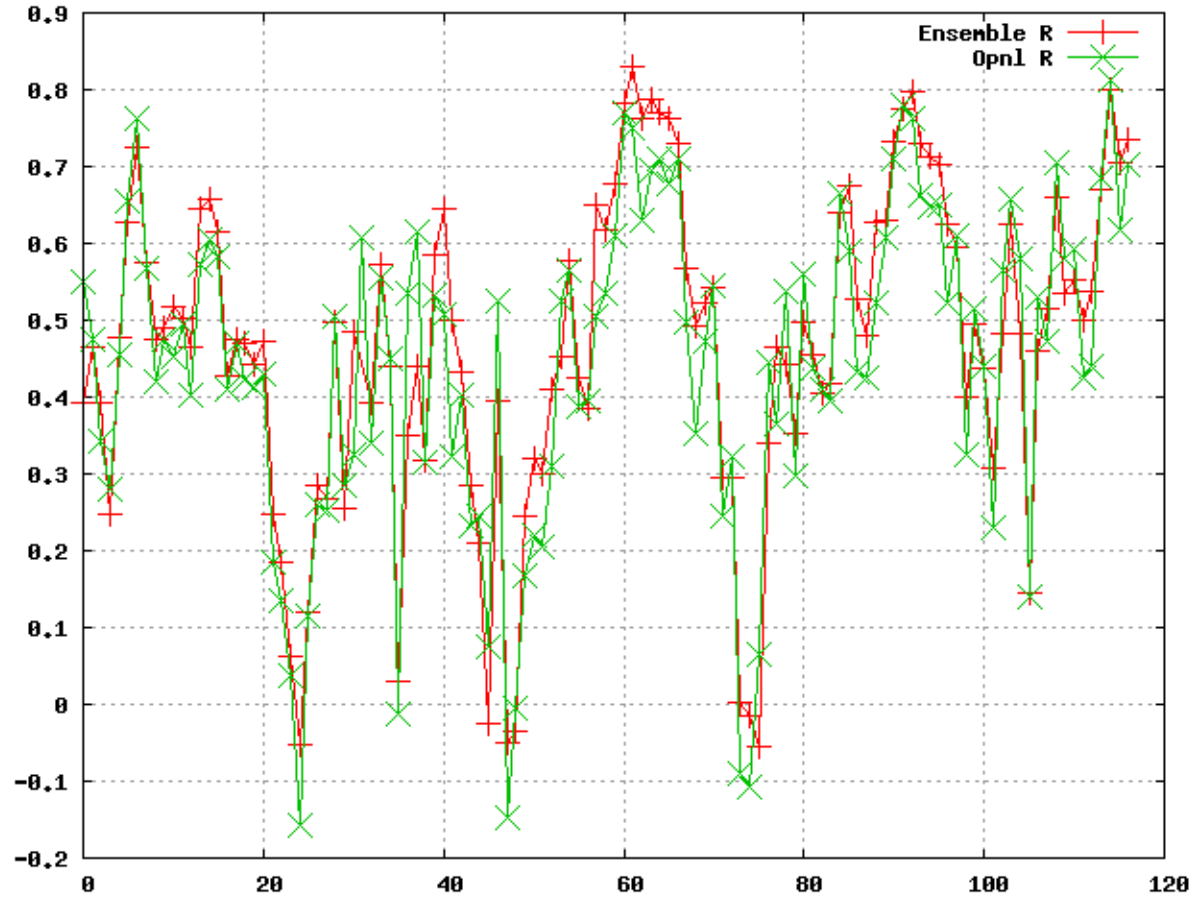
76-41 wins

Vector Correlation – 6 days



74-42

Distance Correlation – 6 days



79-37

Observations

- .Generally better (if not by much)
- .No sign that finer mesh than 25.4 km is warranted (not shown, so far)
- .Frequency of observation via satellite supports geographic tuning of drift relationship
- .Scores generally better versus satellite data than buoy – coverage, satellite issues

Operations Concerns

- Run time increases from ~ 1 to ~13 minutes (user queues)
- Start time of job may be moved up 12 minutes (any time after GEFS bias correction ends)
- No change in distributed output formats (best guess from ensemble replaces the single deterministic forecast)
- Request archival to HPSS and distribution by ftpprd (currently none)