

Introduction

The Center for Coastal Physical Oceanography at Old Dominion University operates two standard range CODAR antennas running at 25.4 MHz: one located at Ocean View Community Beach (VIEW) and the other at the Fourth Island of the Chesapeake Bay Bridge Tunnel.



Figure 1: The VIEW antenna (left) and the electronics setup (upper right) inside the City of Norfolk maintenance building (lower left).



Figure 2: The CBBT antenna mounted to the roof of the fan and ventilation building at the Fourth Island (left). The south wall of the rooftop opposite the antenna (lower right) and the Chesapeake Channel (lower right).

Study Area

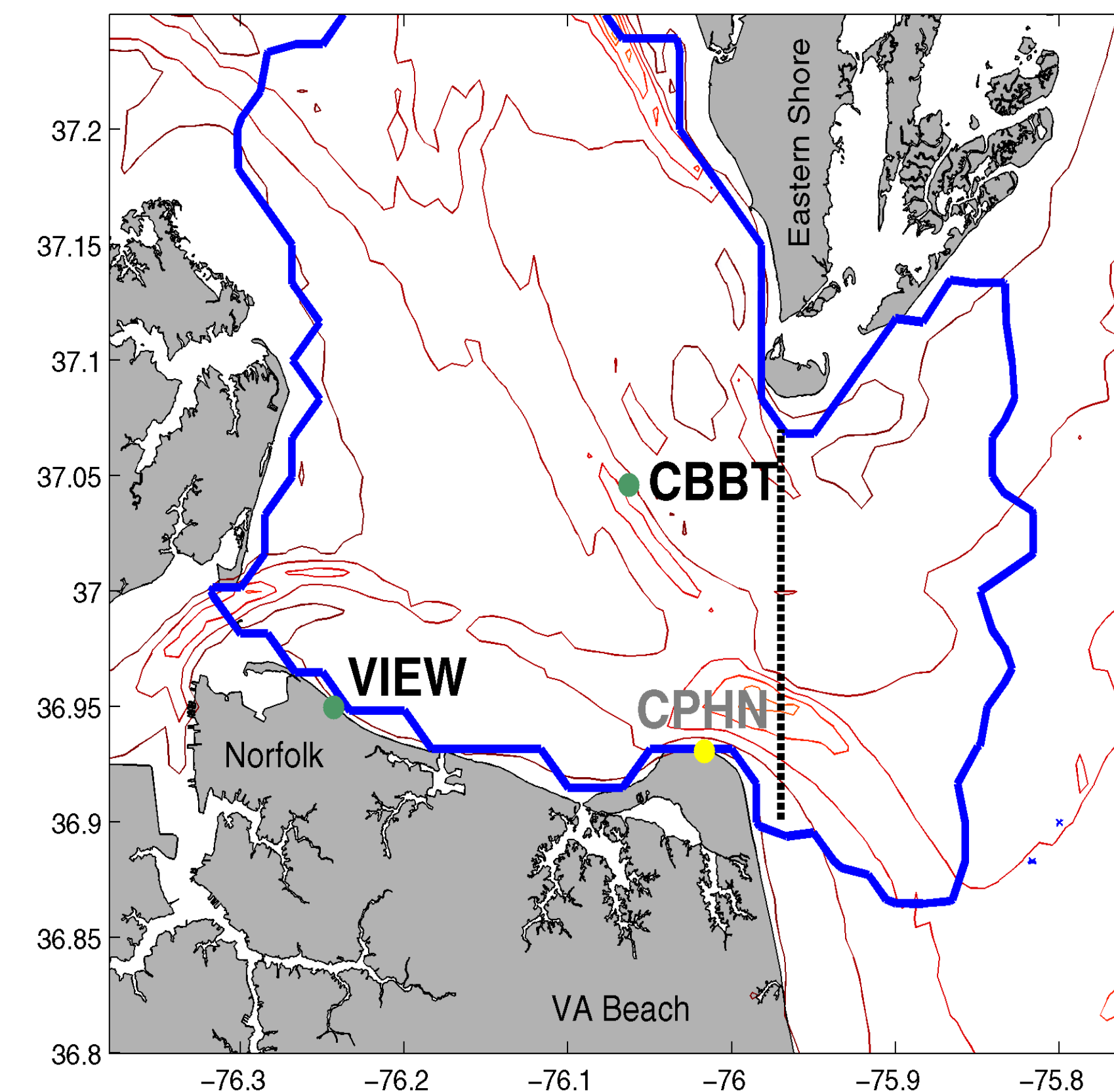


Figure 3: Map displaying the locations of VIEW and CBBT antenna sites. CPHN indicates the future site of a NOAA antenna at Cape Henry. Outlined in blue is the area of 90% total vector coverage over a 48-hour period. Unfortunately, land interference and range limitations reduce data quality in the area to the right of the dashed line.

Site Performance & Radial Coverage

Average for Time period: May 24 22:00 – Aug 23 19:00 (2007)	CBBT	VIEW
Range (km)	29.5	34.2
Noise Floor, Monopole (dBm)	-130.2	-143.1
Signal To Noise, Monopole (dB)	32.4	39.5
Radial Vector Count (measured pattern)	686	417

Table 1: A comparison of performance statistics at both sites.

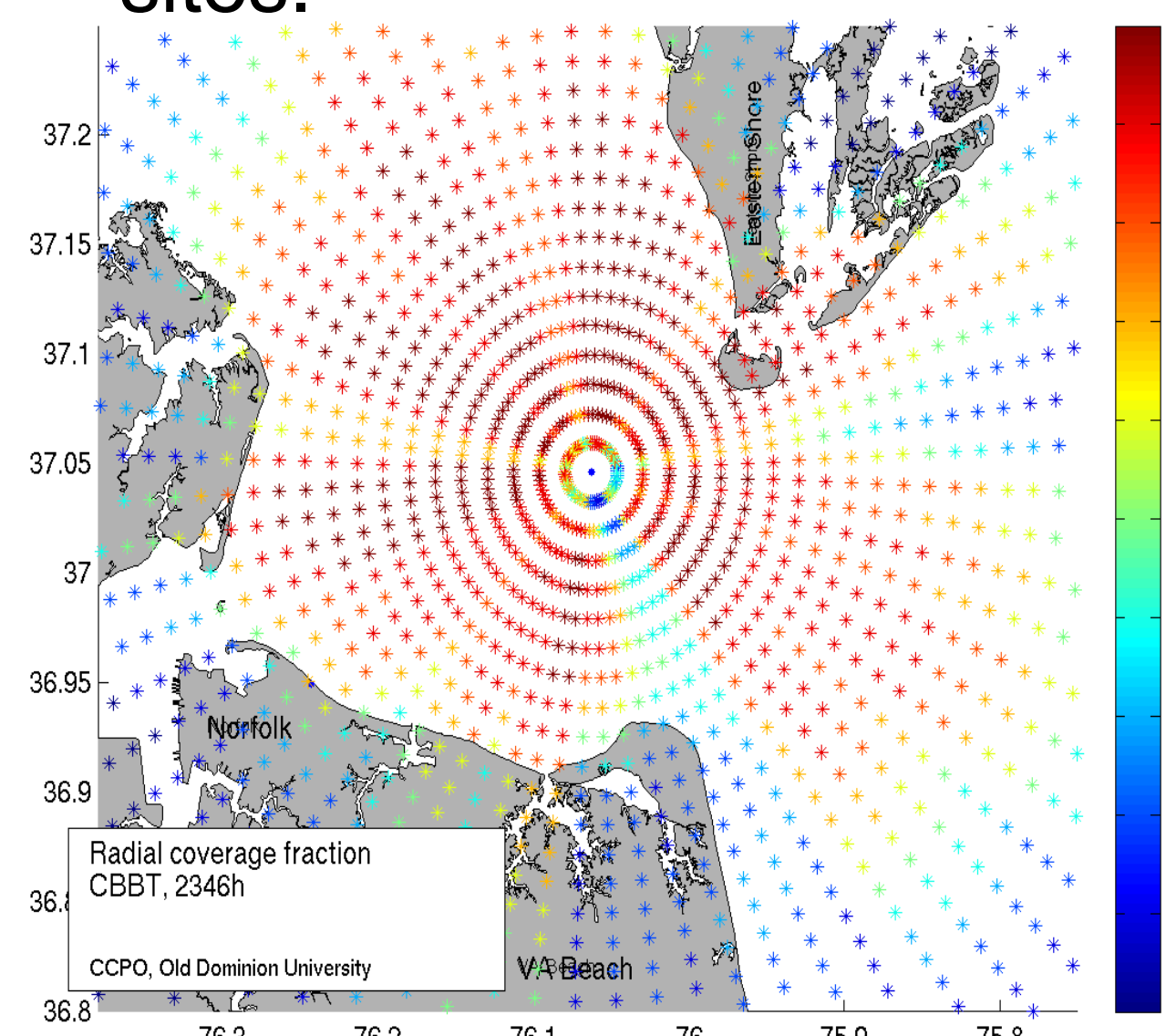
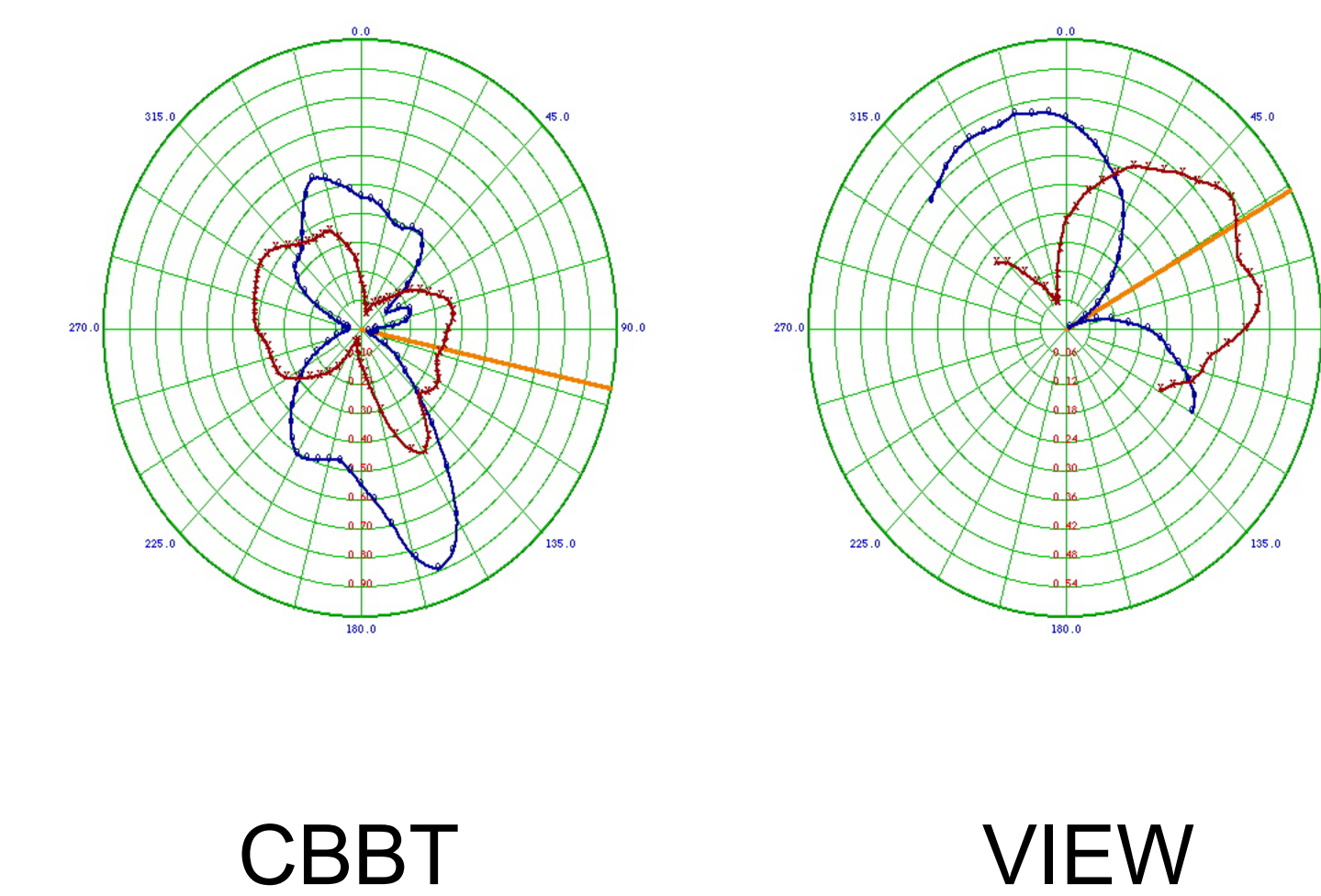
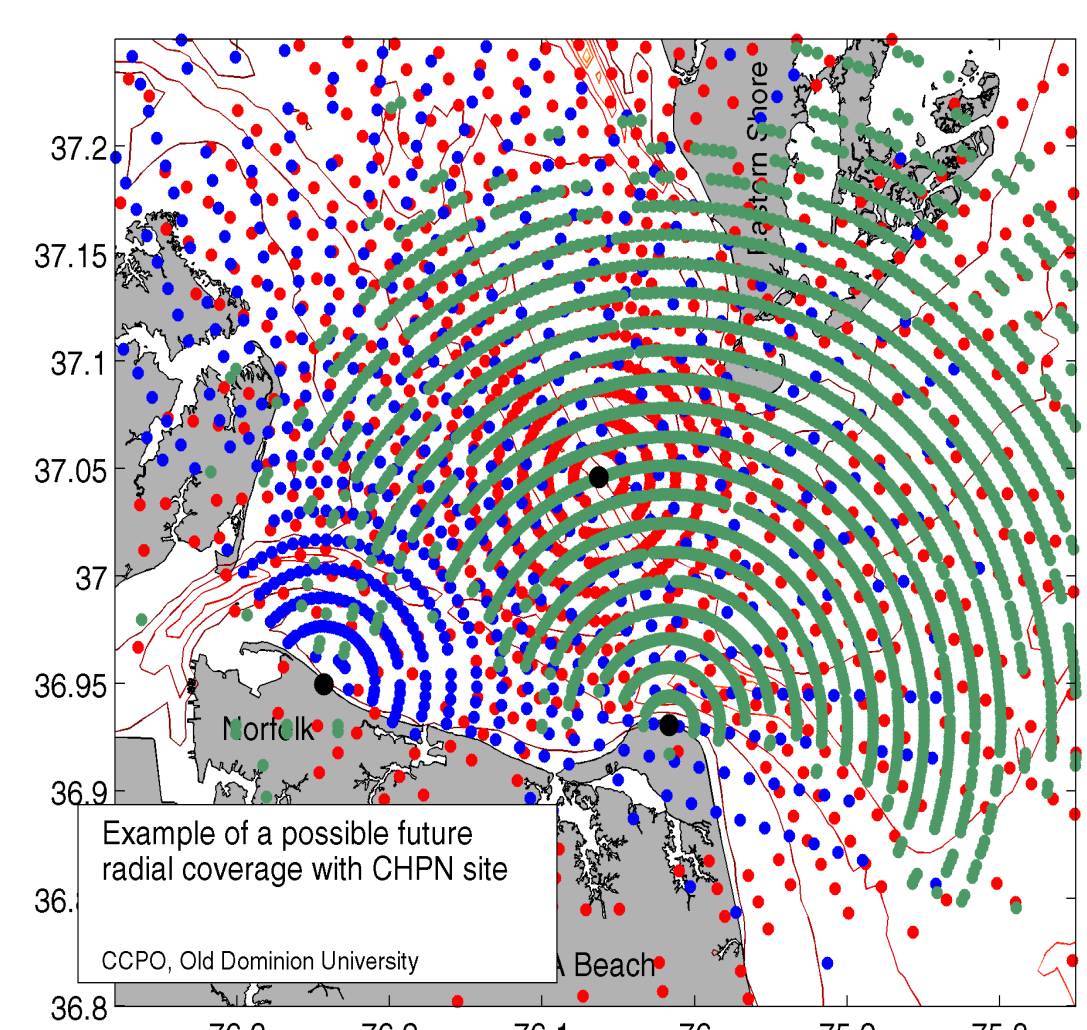


Figure 5: Radial coverage plots for the two sites with measured patterns. Coverage is worse for VIEW looking east and also outside the Bay mouth near the limit of its range. Coverage at CBBT is diminished to the SSE due to local interference.

Measured Patterns

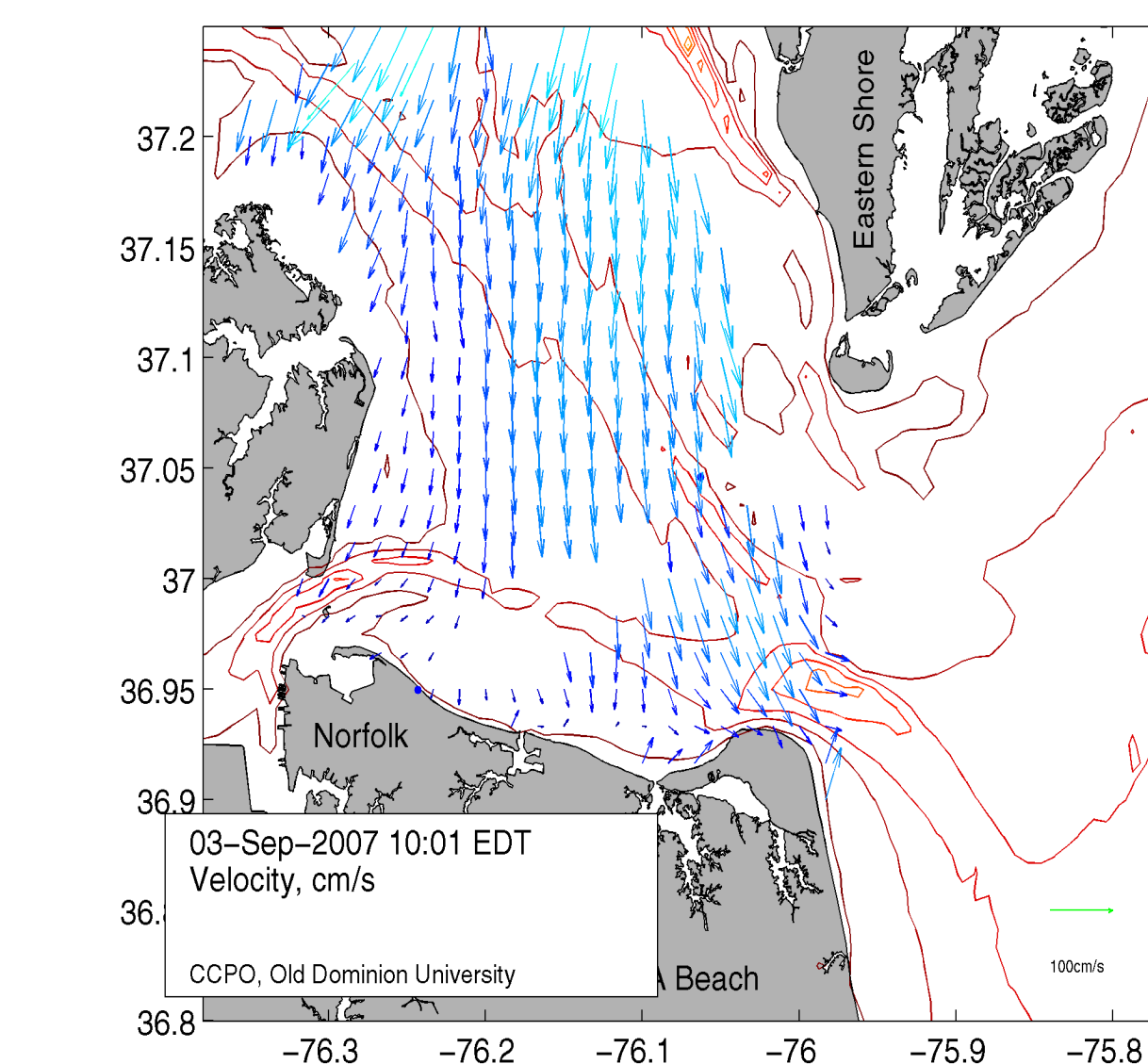


Future Coverage

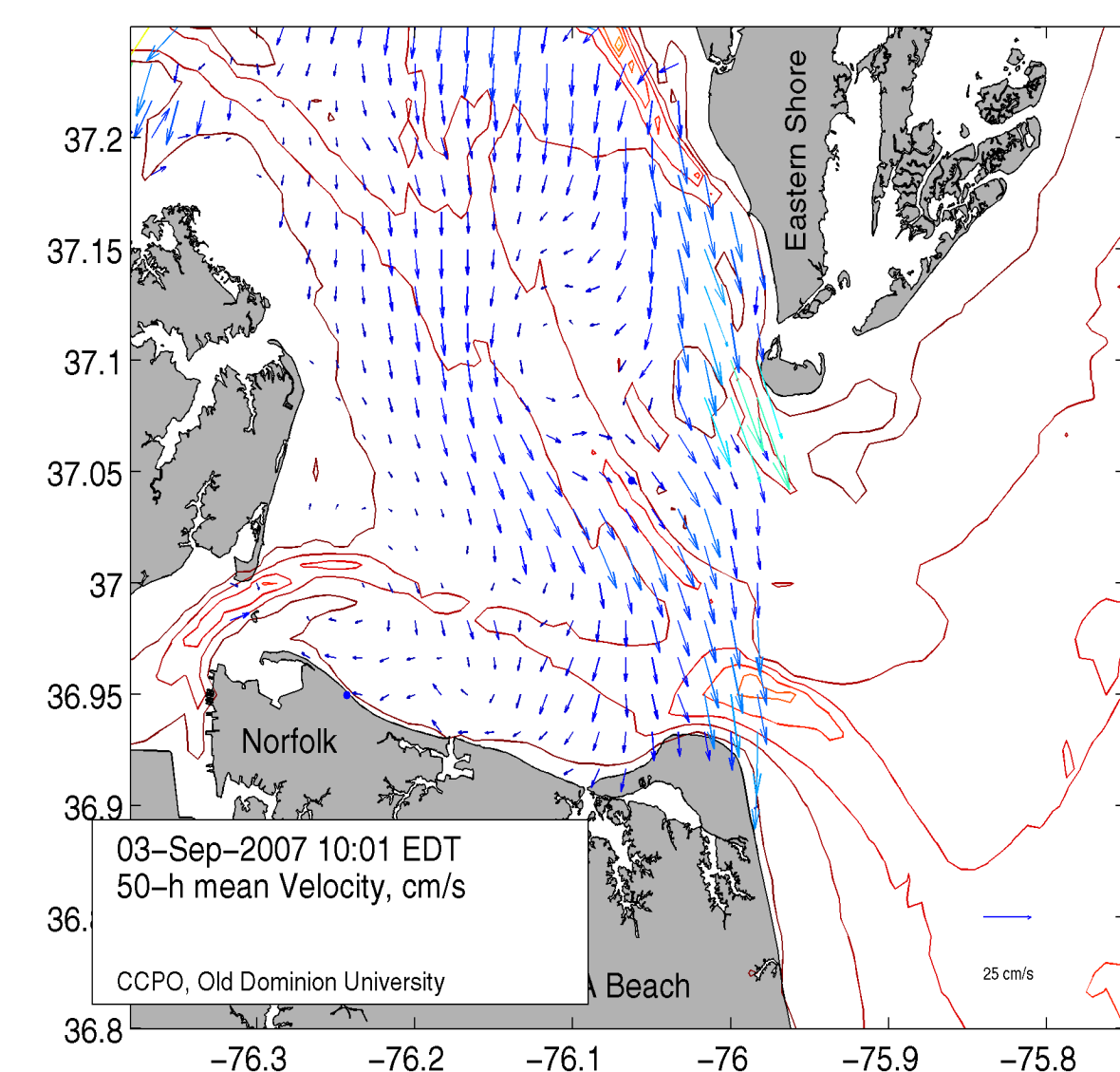


Online Data Products

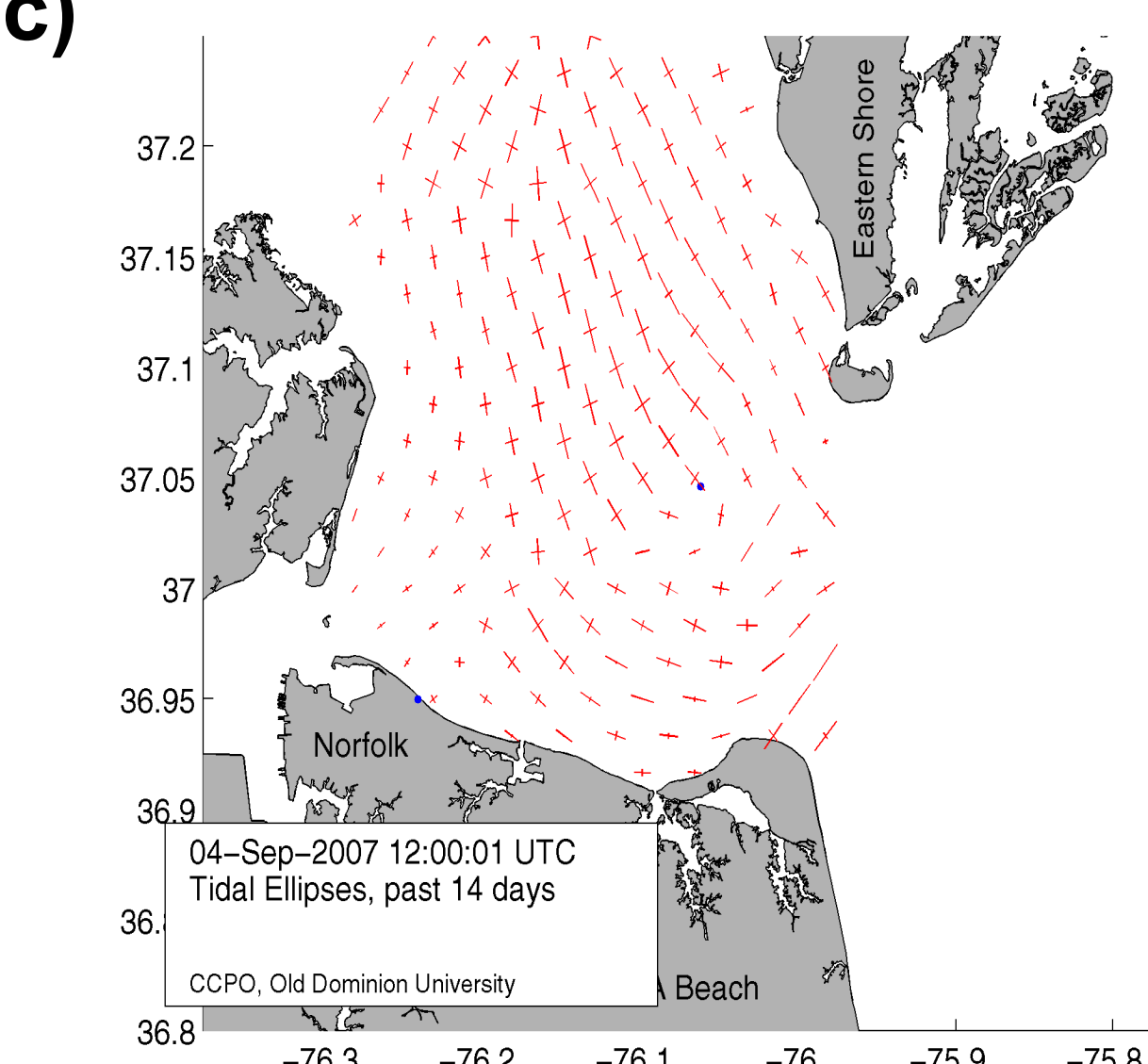
(a)



(b)



(c)



(d)

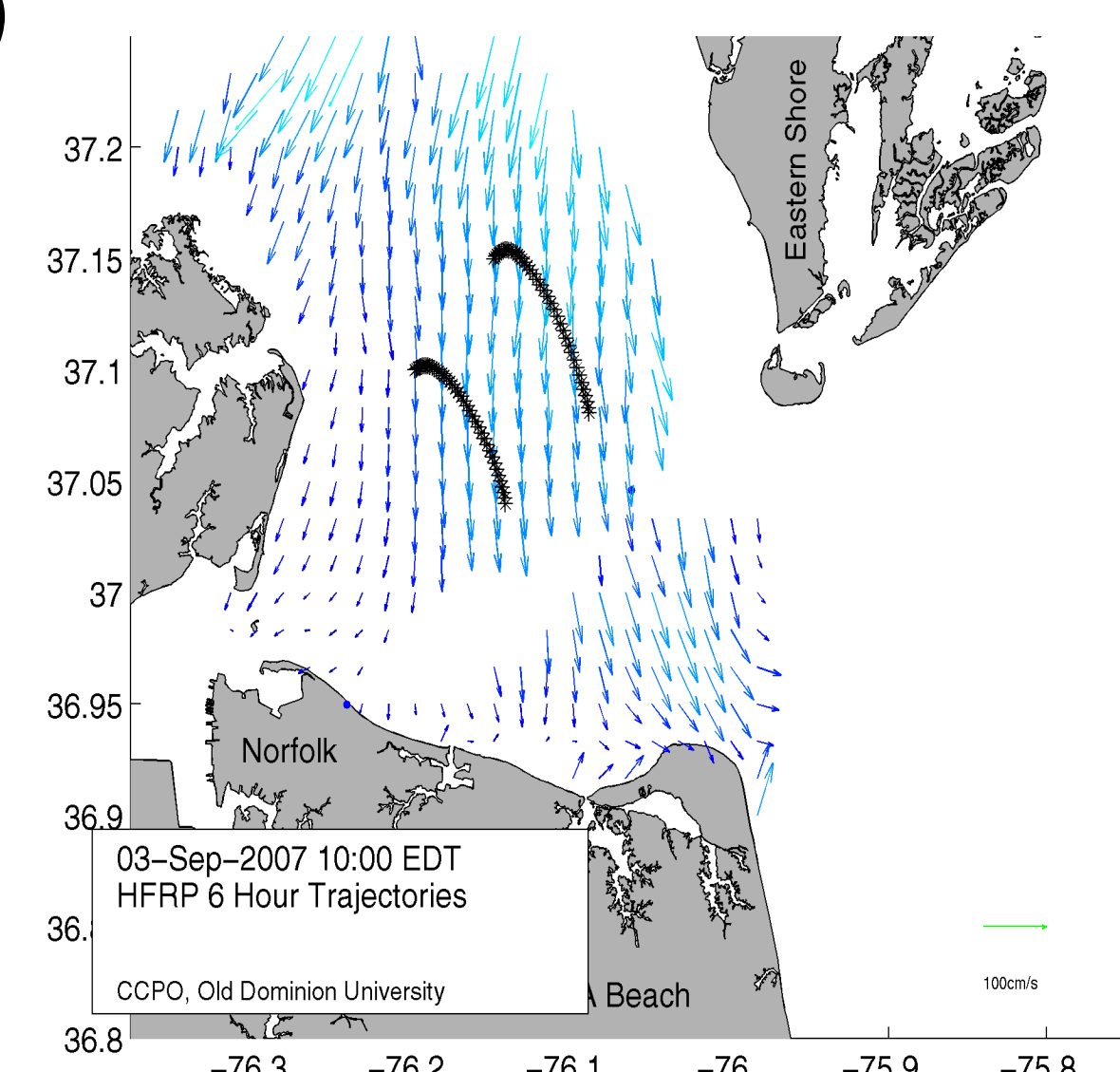


Figure 6: (a) Hourly total velocity vectors, (b) 50-hour "subtidal" mean velocities, (c) tidal ellipses and (d) 6-hour trajectories.

Access to Data

Data are freely available on the project website (www.lions.odu.edu/org/cbc) and on the National HFRADAR Network Gateway (<http://cordc.ucsd.edu/projects/mapping/>).

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CONTACT

Center for Coastal Physical Oceanography
Old Dominion University, Norfolk, VA 23529

Teresa Garner (garner@ccpo.odu.edu)
Jose Blanco (jblanco@ccpo.odu.edu)
Larry Atkinson (latkinso@odu.edu)