

AOP Observations and Processing at WHOI

Overview for NASA workshop
Santa Barbara, CA
13-15 January 2009

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Satlantic, Inc. Free-fall profilers

~1 m



Ed

Lu

SPMR

412, 443, 510, 555, 665, 683 nm

10 nm resolution

6 Hz frame rate

Ed



~30 cm

Lu

HyperPro

350 – 800 nm

~10 nm resolution

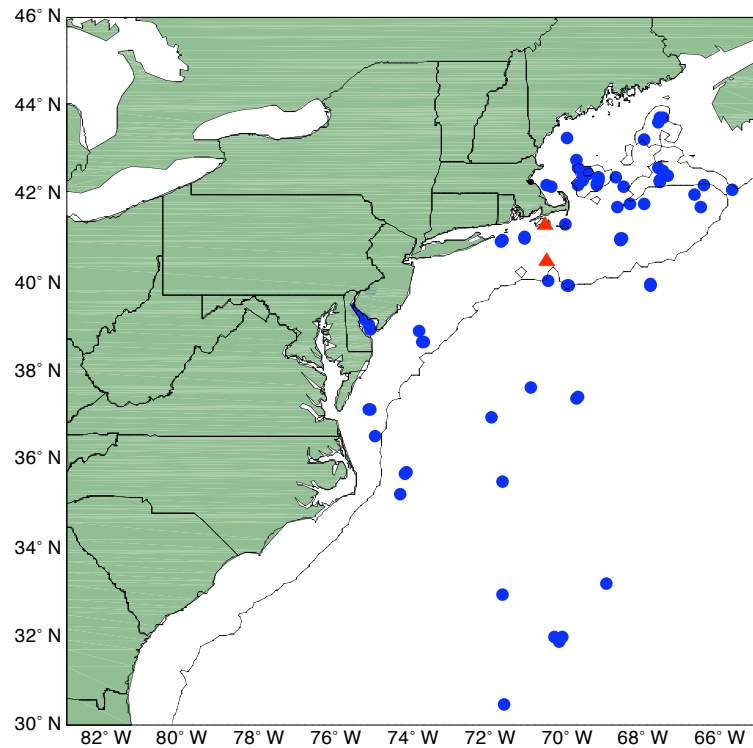
~3 Hz frame rate

(or less)

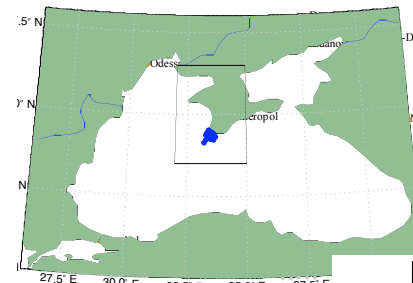
Pressure, T, conductivity,
surface reference
with both

Station = multiple casts in quick succession

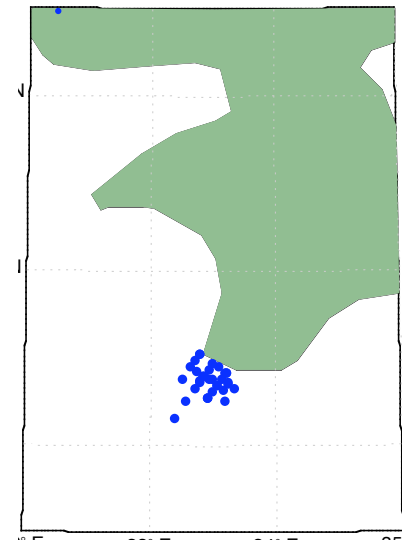
Profile observations,
Mainly continental shelf locations
including inner shelf (< ~20 m)



> 110 locations off US East Coast



33 locations off
Crimean Coast
Black Sea



MVCO - Martha's Vineyard Coastal Observatory

Time series

Daily SeaPRISM (since 2004)

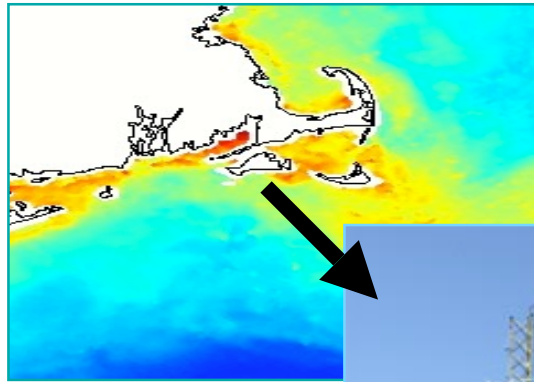
Intermittent HyperPro
(stns since 2007)



SeaPRISM



AERONET
plus ocean color



Collaboration with Ru Morrison
& Hui Feng, UNH

Satlantic, Inc. “ProSoft”

versions 7 & 8 (MATLAB based)

Radiometric calibration



Binning (depth or time)

Custom step (MATLAB)
for dark correction
(SPMR only)

Product calculation

K, R, Rrs, Lwn, PAR, etc.

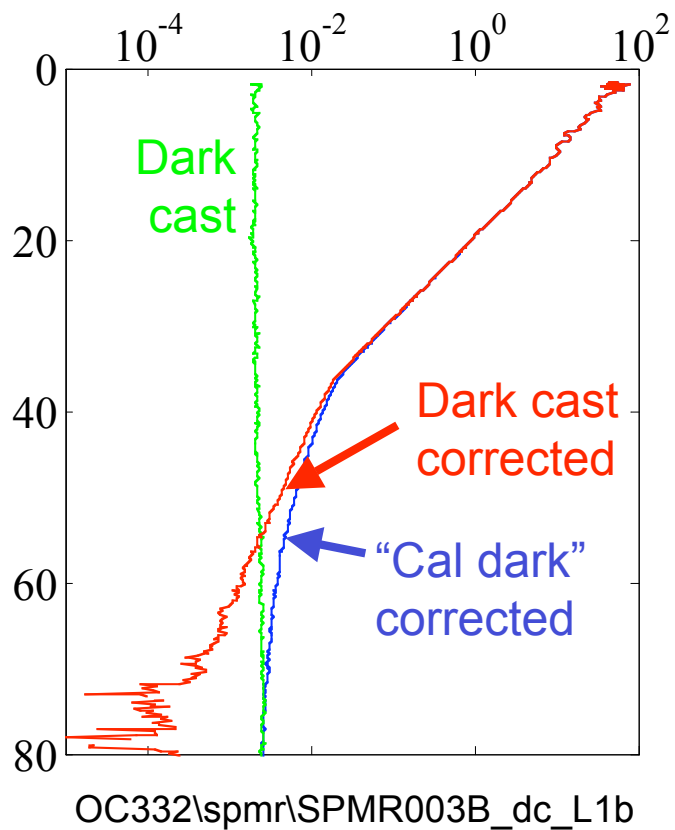
SPMR Dark Correction

Procedure

Collect full dark profile (caps on), at end of each cast sequence

Apply depth-dependent dark offset (before binning)

Proceed with ProSoft processing



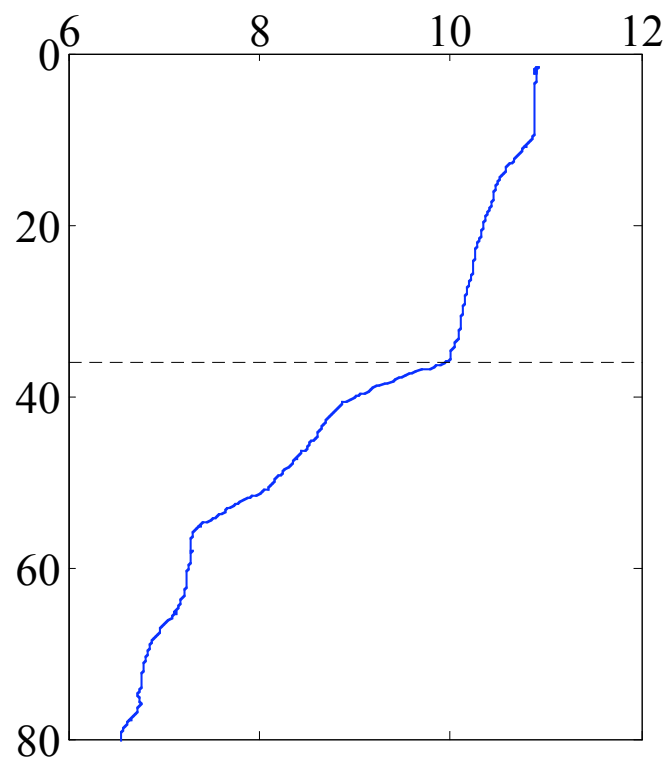
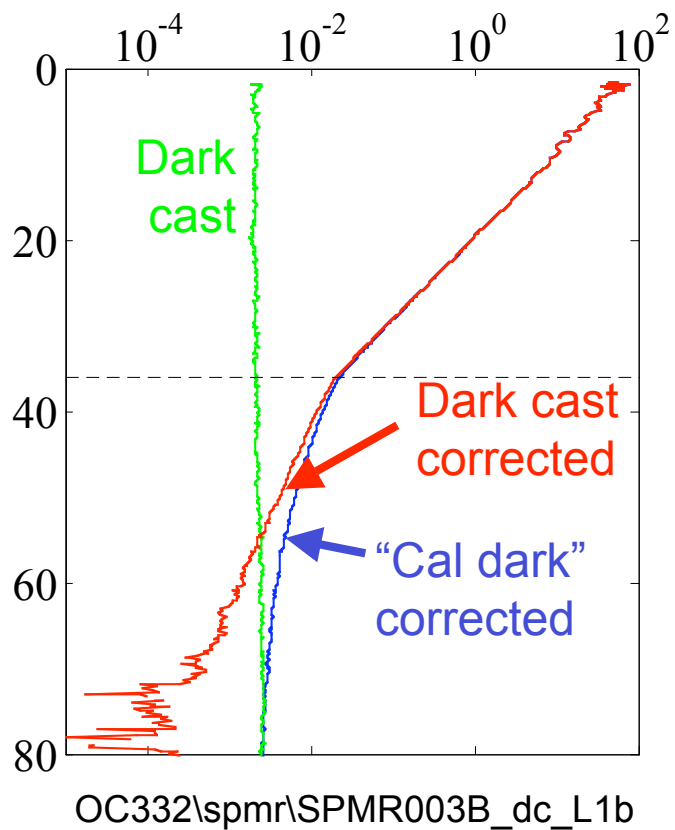
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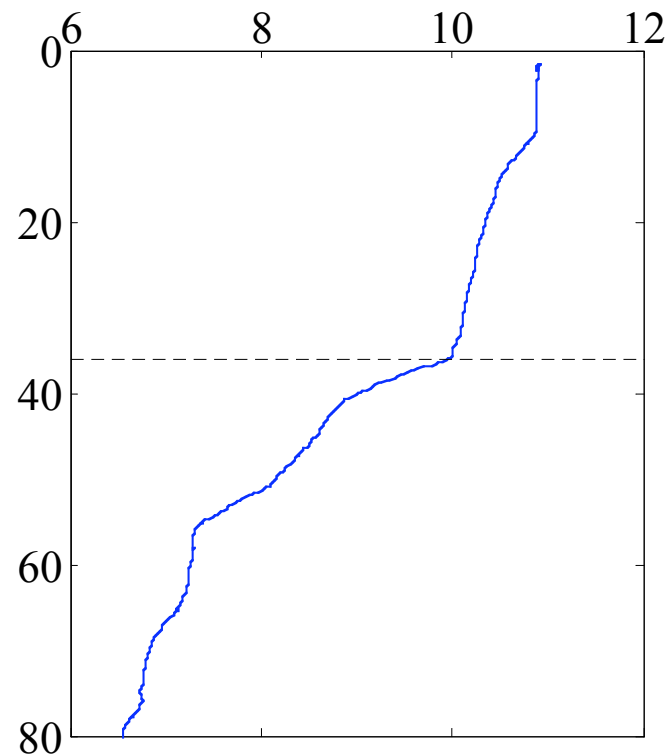
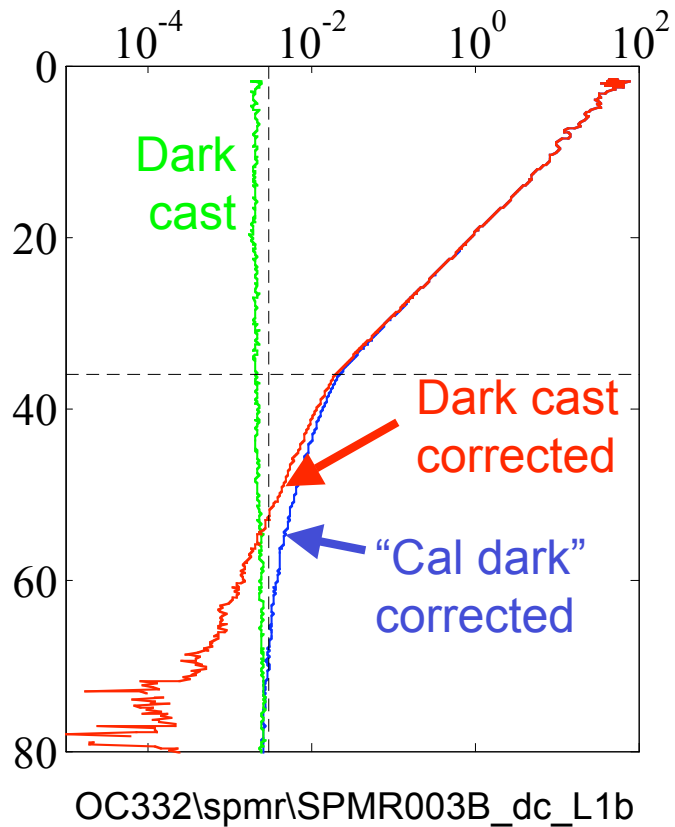
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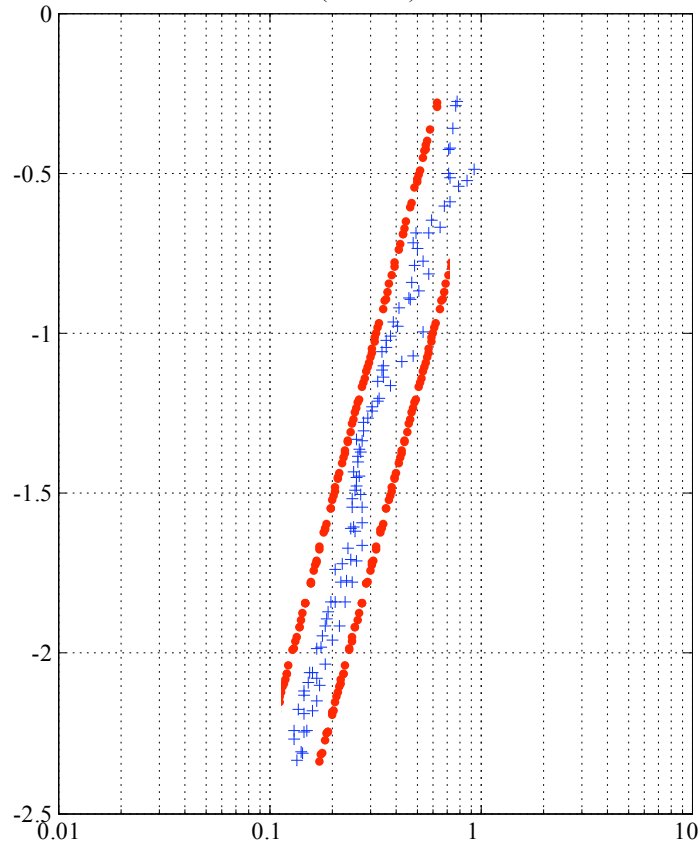
New ProSoft (ver. 8) method for HyperPro analysis of near surface properties

Procedure

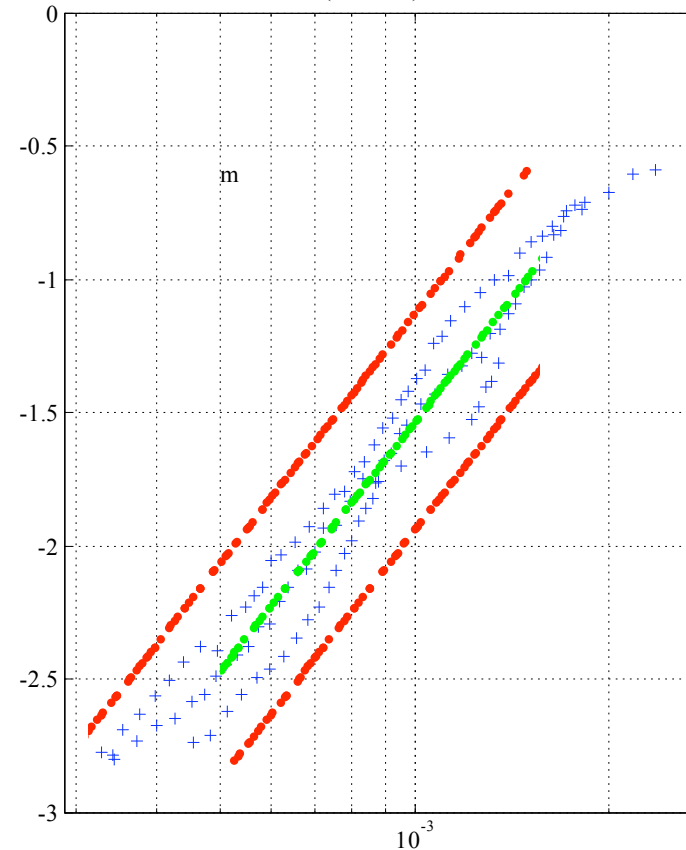
Collect multiple profiles of upper layer in rapid sequence (one log file)
Use composite for upper layer K (optical depth criteria)
extrapolation to $z = 0^-$, standard errors for $Lu(0^-)$ and K



Multicast Profile - Normalized Ed(699.79) Raw Data: 2008-073-133053.raw



Multicast Profile - Normalized Lu(699.79) Raw Data: 2008-073-133053.raw



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