SeaWiFS *In Situ* Matchup Analysis

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Matchup Criteria

- ## Time and Space
  - ± 240 minutes
  - 3x3 pixel box; 5 of the 9 pixels valid

- ## Masks and Flags
  - Atmospheric correction algorithm failure
  - Land
  - Sun glint
  - Total radiance above the knee value
  - Large spacecraft zenith angle
  - Stray light
  - Clouds/Ice
  - Coccolithophores
  - Turbid water
  - Large solar zenith angle
  - Low $L_{WN}(555)$

Matchup Summary

- Data sets considered
  - Number of in situ stations   2289
  - Number SeaWiFS files tested   3076
- 5 of 9 valid pixels   878
- Eliminate duplicate coverage   97
- Pass stdev/mean test[*]

$L_W(412)$	80	$L_W(510)$	92
$L_W(443)$	90	$L_W(555)$	95
$L_W(490)$	95	Chlorophyll[§]	73

[*] SeaWiFS L_{WN} must be positive

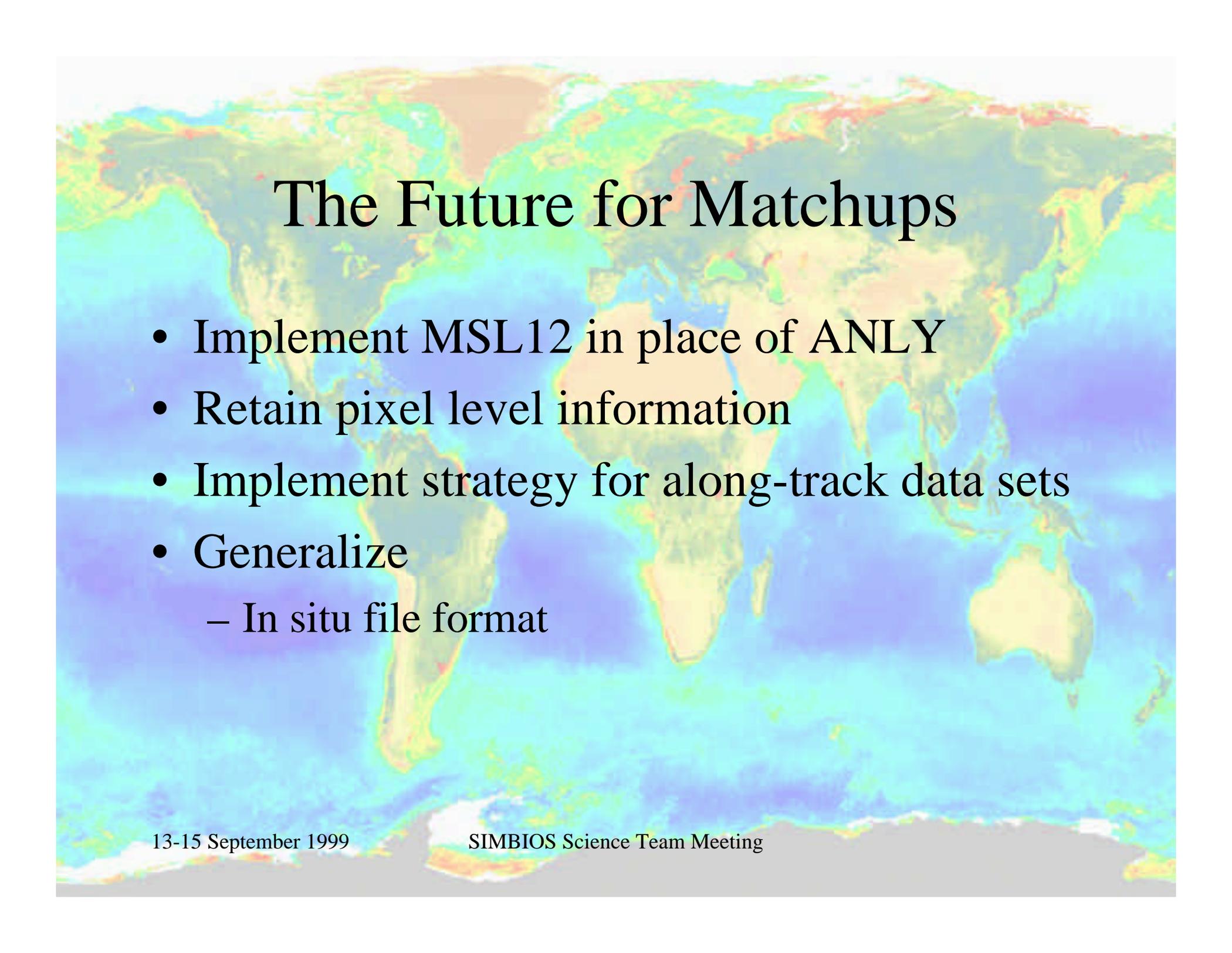[§] Not all optical stations provided chlorophyll measurements

Matchup Statistics

	SeaWiFS/In Situ	Std Dev	Range of In Situ Values
$L_W(412)$	0.887	0.376	0.053 - 1.967
$L_W(443)$	1.024	0.470	0.089 - 1.908
$L_W(490)$	0.989	0.417	0.162 - 3.381
$L_W(510)$	1.035	0.459	0.132 - 3.199
$L_W(555)$	1.136	0.605	0.059 - 3.198
Chlorophyll	1.362	1.035	0.027 - 4.650

The Future for Matchups

- Implement MSL12 in place of ANLY
- Retain pixel level information
- Implement strategy for along-track data sets
- Generalize
  - In situ file format