



Chl-a, Day 018, January 18, 2015

0.05 0.1 0.2 0.5 1 2 5 10

Exercises with Level-2 match-ups

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Match-ups should be done with L 2 data; Advantages:

- Full (unmapped) spatial resolution → a major advantage!
- All variables included or can be computed from *Rrs*

Need station info; example:

long,lat,DateUTC,TimeUTC,stationID

-116.7487,31.8456,01/22/2015,18:00,Yellow

-116.695,31.7694,01/22/2015,19:30,Green

Contents of L2 OC files

MODISA L2:

SeaWiFS L2:

VIIRS L2:

(different Rrs, etc)

(different Rrs, etc)

Image Name	Width	Height	Type
longitude	421	783	float32
latitude	421	783	float32
aot_869	421	783	int16
angstrom	421	783	int16
Rrs_412	421	783	int16
Rrs_443	421	783	int16
Rrs_469	421	783	int16
Rrs_488	421	783	int16
Rrs_531	421	783	int16
Rrs_547	421	783	int16
Rrs_555	421	783	int16
Rrs_645	421	783	int16
Rrs_667	421	783	int16
Rrs_678	421	783	int16
chlor_a	421	783	float32
Kd_490	421	783	int16
pic	421	783	int16
poc	421	783	int16
cdom_index	421	783	int16
ipar	421	783	int16
nflh	421	783	int16
par	421	783	int16
l2_flags	421	783	int32

Image Name	Width	Height	Type
longitude	1285	2897	float32
latitude	1285	2897	float32
aot_865	1285	2897	int16
angstrom	1285	2897	int16
Rrs_412	1285	2897	int16
Rrs_443	1285	2897	int16
Rrs_490	1285	2897	int16
Rrs_510	1285	2897	int16
Rrs_555	1285	2897	int16
Rrs_670	1285	2897	int16
chlor_a	1285	2897	float32
Kd_490	1285	2897	int16
pic	1285	2897	int16
poc	1285	2897	int16
cdom_index	1285	2897	int16
par	1285	2897	int16
l2_flags	1285	2897	int32

Image Name	Width	Height	Type
aot_862	1172	768	int16
angstrom	1172	768	int16
Rrs_410	1172	768	int16
Rrs_443	1172	768	int16
Rrs_486	1172	768	int16
Rrs_551	1172	768	int16
Rrs_671	1172	768	int16
chlor_a	1172	768	float32
chl_ocx	1172	768	float32
Kd_490	1172	768	int16
pic	1172	768	int16
poc	1172	768	int16
par	1172	768	int16
l2_flags	1172	768	int32
longitude	1172	768	float32
latitude	1172	768	float32

Open sample files, load SDS, explain meaning and units using attributes!

Contents of L2 IOP files

VIIRS OC L2

VIIRS IOP L2

Image Name	Width	Height	Type
HOV aot_862	1172	768	int16
HOV angstrom	1172	768	int16
HOV Rrs_410	1172	768	int16
HOV Rrs_443	1172	768	int16
HOV Rrs_486	1172	768	int16
HOV Rrs_551	1172	768	int16
HOV Rrs_671	1172	768	int16
HOV chlor_a	1172	768	float32
HOV chl_ocx	1172	768	float32
HOV Kd_490	1172	768	int16
HOV pic	1172	768	int16
HOV poc	1172	768	int16
HOV par	1172	768	int16
HOV l2_flags	1172	768	int32
HOV longitude	1172	768	float32
HOV latitude	1172	768	float32

Image Name	Width	Height	Type
HOV a_410_giop	1139	677	short
HOV a_443_giop	1139	677	short
HOV a_486_giop	1139	677	short
HOV a_551_giop	1139	677	short
HOV a_671_giop	1139	677	short
HOV bb_410_giop	1139	677	short
HOV bb_443_giop	1139	677	short
HOV bb_486_giop	1139	677	short
HOV bb_551_giop	1139	677	short
HOV bb_671_giop	1139	677	short
HOV aph_443_giop	1139	677	short
HOV adg_443_giop	1139	677	short
HOV adg_s_giop	1139	677	float
HOV bbp_443_giop	1139	677	short
HOV bbp_s_giop	1139	677	float
HOV rrsdiff_giop	1139	677	float
HOV aph_unc_443_giop	1139	677	short
HOV adg_unc_443_giop	1139	677	short
HOV bbp_unc_443_giop	1139	677	short
HOV l2_flags	1139	677	int
HOV longitude	1139	677	float
HOV latitude	1139	677	float

Open sample files, load SDS, explain meaning and units using attributes!

Date/Time formats can be different:

long,lat,DateUTC,TimeUTC,stationID

-116.7487,31.8456,**01/22/2015**,18:00, Yellow

-116.695,31.7694,**01/22/2015**,19:30, Green

Or

long,lat,DateUTC,TimeUTC,stationID

-116.7487,31.8456,**22-01-2015**,18:00, Yellow

-116.695,31.7694,**22-01-2015**,19:30, Green

Or

long,lat,DateUTC,TimeUTC,stationID

-116.7487,31.8456,2015/**01/22**,18:00, Yellow

-116.695,31.7694, **2015/01/22**,19:30, Green

Type *wam_match_l2* for syntax options; *chlor_a* and *l2_flags* are included by default

```
cd C:\Sat\NBaja
```

```
// MODISA
```

```
wam_match_l2 station_info.csv
```

```
2015\A2015\0\Good\A2015*OC.x.hdf maxDiffdays=5
```

```
sensor=MODISA gettimefromAttributes=yes
```

```
wam_match_l2 station_info.csv
```

```
2015\A2015\0\Good\A2015*OC.x.hdf aot_869 angstrom
```

```
Rrs_412 Rrs_443 Rrs_469 Rrs_488 Rrs_531 Rrs_547 Rrs_555
```

```
Rrs_645 Rrs_667 Rrs_678 chlor_a Kd_490 pic poc
```

```
cdom_index ipar nflh par maxDiffdays=5 sensor=MODISA
```

```
gettimefromAttributes=yes
```

// MODIST

wam_match_l2 station_info.csv

2015\T2015\0\Good\T2015*OC.x.hdf aot_869 angstrom

Rrs_412 Rrs_443 Rrs_469 Rrs_488 Rrs_531 Rrs_547 Rrs_555

Rrs_645 Rrs_667 Rrs_678 chlor_a Kd_490 pic poc

cdom_index ipar nflh par maxDiffdays=5 sensor=MODIST

gettimefromAttributes=yes

// VIIRS

wam_match_l2 station_info.csv

2015\V2015\0\Good\V2015*OC.x.hdf aot_862 angstrom

Rrs_410 Rrs_443 Rrs_486 Rrs_551 Rrs_671 chlor_a chl_ocx

Kd_490 pic poc par maxDiffdays=5 sensor=VIIRS

gettimefromAttributes=yes

Similar approach to IOP files:

// MODISA

wam_match_l2 station_info.csv

2015\A2015\0\Good\A2015*IOP.x.hdf % VARIABLES%

maxDiffdays=5 sensor=MODISA gettimefromAttributes=yes

// MODIST

wam_match_l2 station_info.csv

2015\T2015\0\Good\T2015*IOP.x.hdf % VARIABLES%

maxDiffdays=5 sensor=MODIST gettimefromAttributes=yes

// VIIRS

wam_match_l2 station_info.csv

2015\V2015\0\Good\V2015*IOP.x.hdf % VARIABLES%

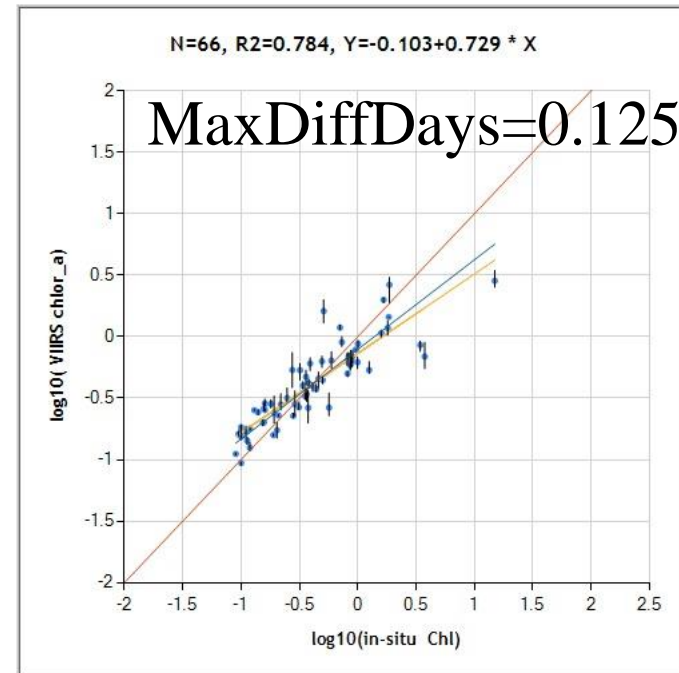
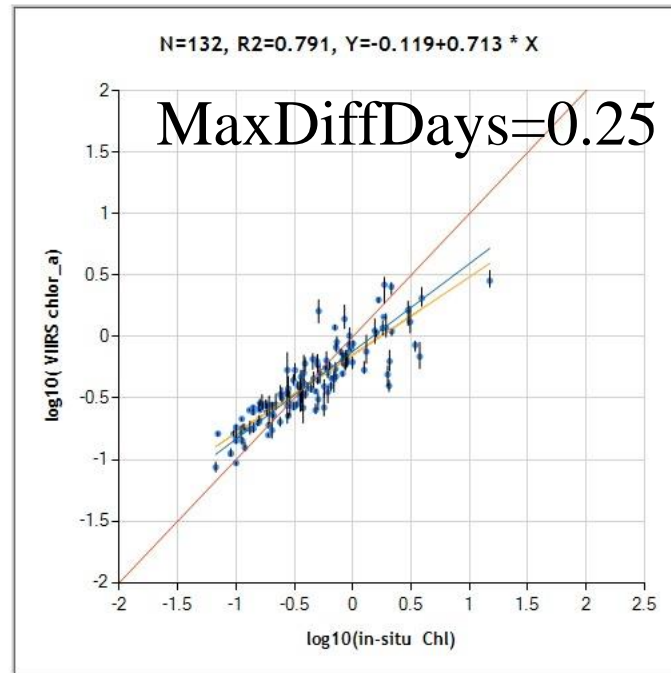
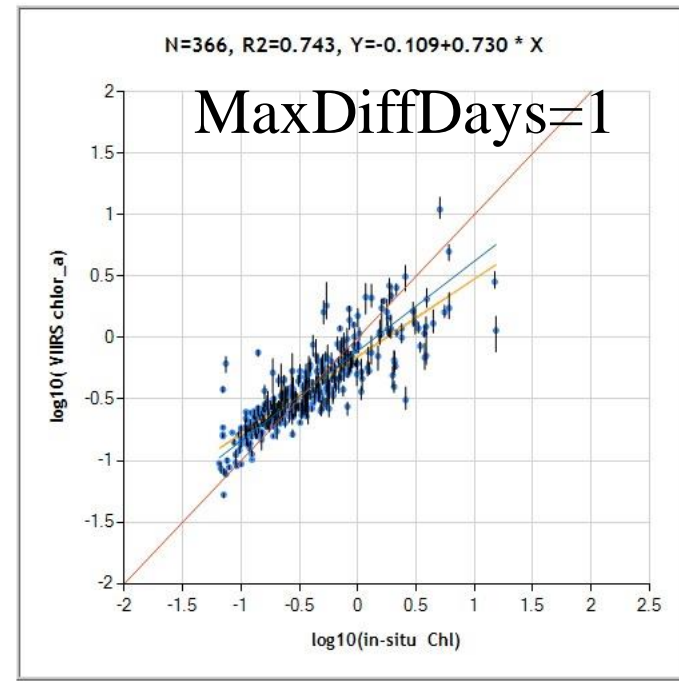
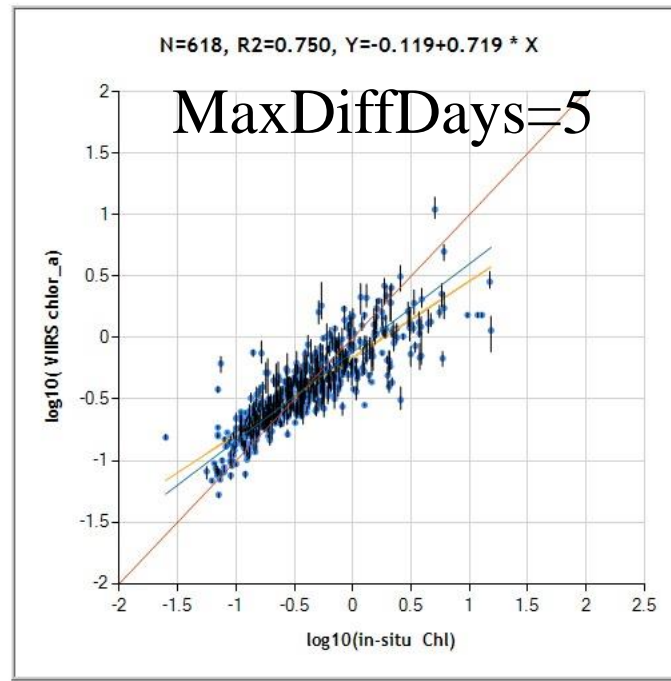
maxDiffdays=5 sensor=VIIRS gettimefromAttributes=yes

wam_read_match station_info_MODISA.csv xmin=-2 xmax=2.5
ymin=-2 ymax=2 maxDiffDays=5 minNValid=5 savestatist=yes

wam_read_match station_info_MODIST.csv xmin=-2 xmax=2.5
ymin=-2 ymax=2 maxDiffDays=5 minNValid=5 savestatist=yes

wam_read_match station_info_VIIRS.csv xmin=-2 xmax=2.5
ymin=-2 ymax=2 maxDiffDays=5 minNValid=5 savestatist=yes

Example of
wam_read_match
with different
MaxDiffDays



MODISA: A2015022_chl_mapped

VIIRS: V2012022_chl_mapped

