

## GSILIB解析例

# L2P(Y)-L2C サイクルシフト補正

### ※L2P(Y)-L2Cサイクルシフト

近代化GPSではL2P(Y)とL2Cを、準天頂衛星ではL2Cを送信している。L2P(Y)とL2Cの間で1/4サイクルのずれが存在し、位相を揃えるための符号が受信機種によって異なる。

→異機種受信機間におけるL2P(Y)、L2Cを併用した解析で補正が必要

# 解析条件

- 観測時間：2014年9月13日0時30分～5時30分
- 観測点：  
つくば長距離GNSS比較基線場（ No.02, No.10 ）
- 受信機：No.02 - JAVAD TRE\_G3T DELTA  
No.10 - Trimble NetR9
- 測位方式：キネマティック
- 衛星系：GPS、QZSS
- No.02を既知点として、No.10を計算

# 手順

※I2c\_data.zipをD:¥に展開と仮定

1. GSILIBのbin¥gsipost\_gui.exeを起動
2. [Options...]を選択
3. [Load]をクリックし、D:¥I2c\_data¥I2c.confを選択
4. [OK]を選択
5. [RINEX OBS: Rover]にNo.10のoファイル(tr102561.14o)、  
[RINEX OBS: Base Station]にNo.02のoファイル  
(jv022561.14o)、[RINEX \*NAV]にNo.02のnファイル  
(jv022561.14n)、qファイル(jv022561.14q)を格納
6. [Execute]を選択し、解析実行
7. D:¥I2c\_dataにposファイル(tr102561.pos)が作成され、  
[Plot...]を選択すれば、グラフを描画する

# データ設定画面

GSIPPOST ver.1.0.0

Time Start (GPST) ?     Time End (GPST) ?     Interval     Unit

2000/01/01 00:00:00    2000/01/01 00:00:00    0 s    24 H

RINEX OBS: Rover ?

D:\2c\_data\tr102561.14o

RINEX OBS: Base Station

D:\2c\_data\jv022561.14o

RINEX \*NAV/CLK, SP3, IONEX or SBS/EMS

D:\2c\_data\jv022561.14n

D:\2c\_data\jv022561.14q

Solution  Dir

D:\2c\_data\tr102561.pos

?

Plot...    View...    To KML...    Options...    Execute    Exit

# Options – Setting1

Options

Setting1 | Setting2 | Setting3 | Output | Statistics | Positions | Files | Misc

Positioning Mode: Kinematic

Frequencies: L1+L2

L2 Code Priority: L2P(Y)

Solution Type: Forward

Elevation Mask (°) / SNR Mask (dbHz): 15

Rec Dynamics/Earth Tides Correction: OFF

Ionosphere Correction: Broadcast

Troposphere Correction: Saastamoinen

Time System Correction: OFF

Satellite Ephemeris/Clock: Broadcast

Sat PCV    Rec PCV    RAIM FDE

Excluded Satellites (+PRN):

GPS    GLO    Galileo    QZSS    SBAS    Beidou

Glonass L1 Code Priority:

Glonass L2 Code Priority:

# Options – Setting2

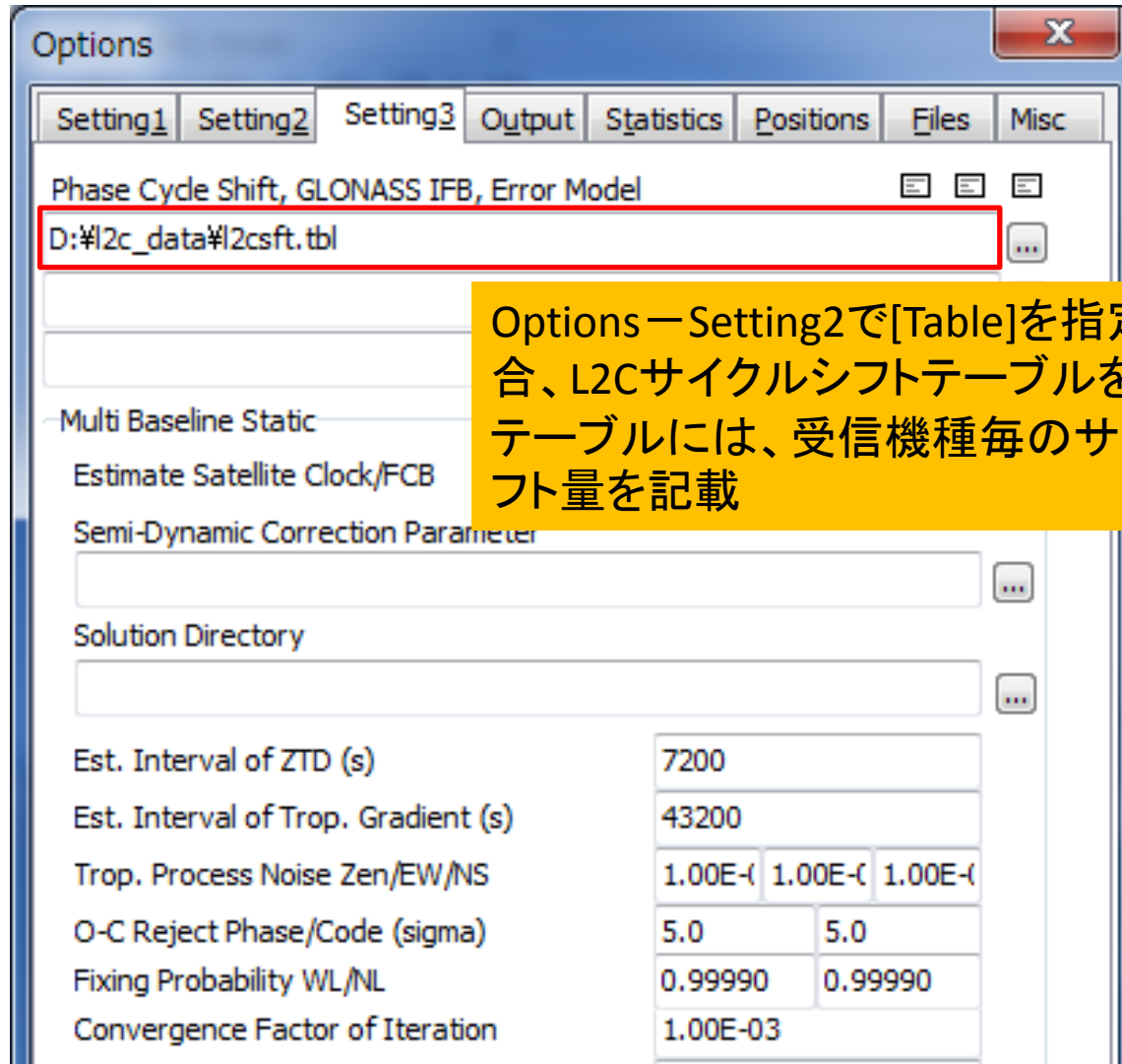
Options

Setting1 Setting2 Setting3 Output Statistics Positions Files Misc

Integer Ambiguity Resolution Method	LAMBDA	
Integer Ambiguity Resolution Strategy	Continuous	
GLONASS Ambiguity Resolution	ON	
PPP Ambiguity Resolution	OFF	
Min Ratio to Fix Ambiguity	3	
Min Confidence / Max FCB to Fix Amb	0.9999	0.2
Min Lock / Elevation (°) to Fix Ambiguity	0	0
Min Fix / Elevation (°) to Hold Ambiguity	10	0
Outage to Reset Amb/Slip Thres (m)	5	0.050
Phase Cycle Shift	Table	
L2C-L2P Bias	OFF	
Max Age of Differential (s)	30.0	
Reject Threshold of GDOP/Innov (m)	30.0	30.0
Number of Filter Iteration	1	
<input type="checkbox"/> Baseline Length Constraint (m)	0.000	0.000
Inter System Bias	OFF	
Analysys Method in Double Differencing	exc. glonass	

[Table]を選択することでサイクルシフト補正。[OFF]は補正しない

# Options – Setting3



Options – Setting2で[Table]を指定した場合、L2Cサイクルシフトテーブルを選択  
テーブルには、受信機種毎のサイクルシフト量を記載

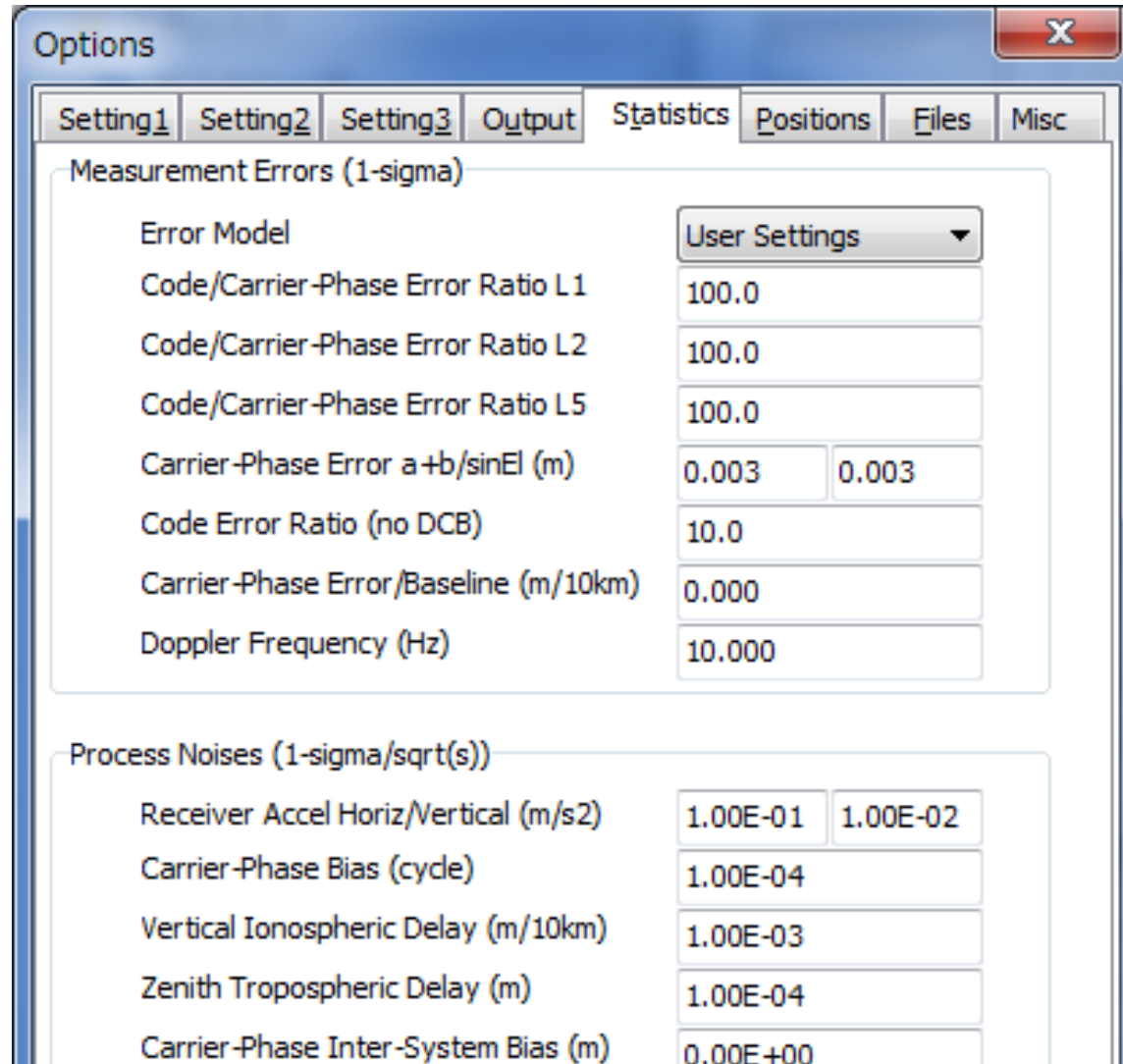
# Options – Output

The screenshot shows the 'Options' dialog box with the 'Output' tab selected. The dialog has a title bar with a close button (X) and a tabbed interface with tabs for Setting1, Setting2, Setting3, Output, Statistics, Positions, Files, and Misc. The 'Output' tab contains the following settings:

Setting	Value
Solution Format	Lat/Lon/Height
Output Header/Processing Options	ON ON
Time Format / # of Decimals	hh:mm:ss GPST 3
Latitude / Longitude Format	ddd.ddddddd
Field Separator	
Datum/Height	WGS84 Ellipsoid
Geoid Model	Internal
Solution for Static Mode	All
NMEA Interval (s) RMC/GGA, GSA/GSV	0 0
Output Solution Status / Debug Trace	OFF OFF
Output ISB Data	OFF <input type="checkbox"/>
	<input type="text"/> ...
Output L2P-L2C Data	OFF <input type="checkbox"/>
	<input type="text"/> ...
Output Position in SINEX	OFF



# Options – Statistics



Options

Setting1 | Setting2 | Setting3 | Output | **Statistics** | Positions | Files | Misc

Measurement Errors (1-sigma)

Error Model	User Settings	
Code/Carrier-Phase Error Ratio L1	100.0	
Code/Carrier-Phase Error Ratio L2	100.0	
Code/Carrier-Phase Error Ratio L5	100.0	
Carrier-Phase Error a+b/sinE1 (m)	0.003	0.003
Code Error Ratio (no DCB)	10.0	
Carrier-Phase Error/Baseline (m/10km)	0.000	
Doppler Frequency (Hz)	10.000	

Process Noises (1-sigma/sqrt(s))

Receiver Accel Horiz/Vertical (m/s <sup>2</sup> )	1.00E-01	1.00E-02
Carrier-Phase Bias (cycle)	1.00E-04	
Vertical Ionospheric Delay (m/10km)	1.00E-03	
Zenith Tropospheric Delay (m)	1.00E-04	
Carrier-Phase Inter-System Bias (m)	0.00E+00	

# Options – Positions

Options

Setting<sub>1</sub> Setting<sub>2</sub> Setting<sub>3</sub> Output Statistics Positions Files Misc

Rover

Lat/Lon/Height (deg/m) ...

90.000000000 0.000000000 -6335367.6285

Antenna Type (\*: Auto) Delta-E/N/U (m)

0.0000 0.0000 0.0000

Receiver Type **Trimble NetR9**

Base Station

RINEX Header Position

36.127528817 140.142

Antenna Type (\*: Auto)

0.0000 0.0000 0.0000

Receiver Type **JAVAD TRE\_G3T DELTA**

Station Position File

...

L2Cサイクルシフトテーブルに記載された受信機名にする  
テーブルに記載がない受信機は補正しない

# Options – Files

The screenshot shows a software window titled "Options" with a close button (X) in the top right corner. The window contains a tabbed interface with the following tabs: Setting1, Setting2, Setting3, Output, Statistics, Positions, Files, and Misc. The "Files" tab is currently selected and displays the following settings:

- Satellite/Receiver Antenna PCV File ANTEX/NGS PCV**: A text box with a list icon and a browse button (three dots).
- Geoid Data File**: A text box with a browse button (three dots).
- Ionosphere Data File**: A text box with a checkbox and a browse button (three dots).
- DCB Data File**: A text box with a list icon and a browse button (three dots).
- ISB Data File**: A text box with a list icon and a browse button (three dots).
- Google Earth Exe File**: A text box with a browse button (three dots).
- BIPM Circular T File**: A text box with a browse button (three dots).
- EOP Data File**: A text box with a list icon and a browse button (three dots).
- OTL BLQ File**: A text box with a list icon and a browse button (three dots).

# Options – Misc

Options

Setting1 Setting2 Setting3 Output Statistics Positions Files Misc

Time Interpolation of Base Station Data OFF

DGPS/DGNSS Corrections SBAS

SBAS Satellite Selection (0: All) 0

RINEX Opt (Rover)

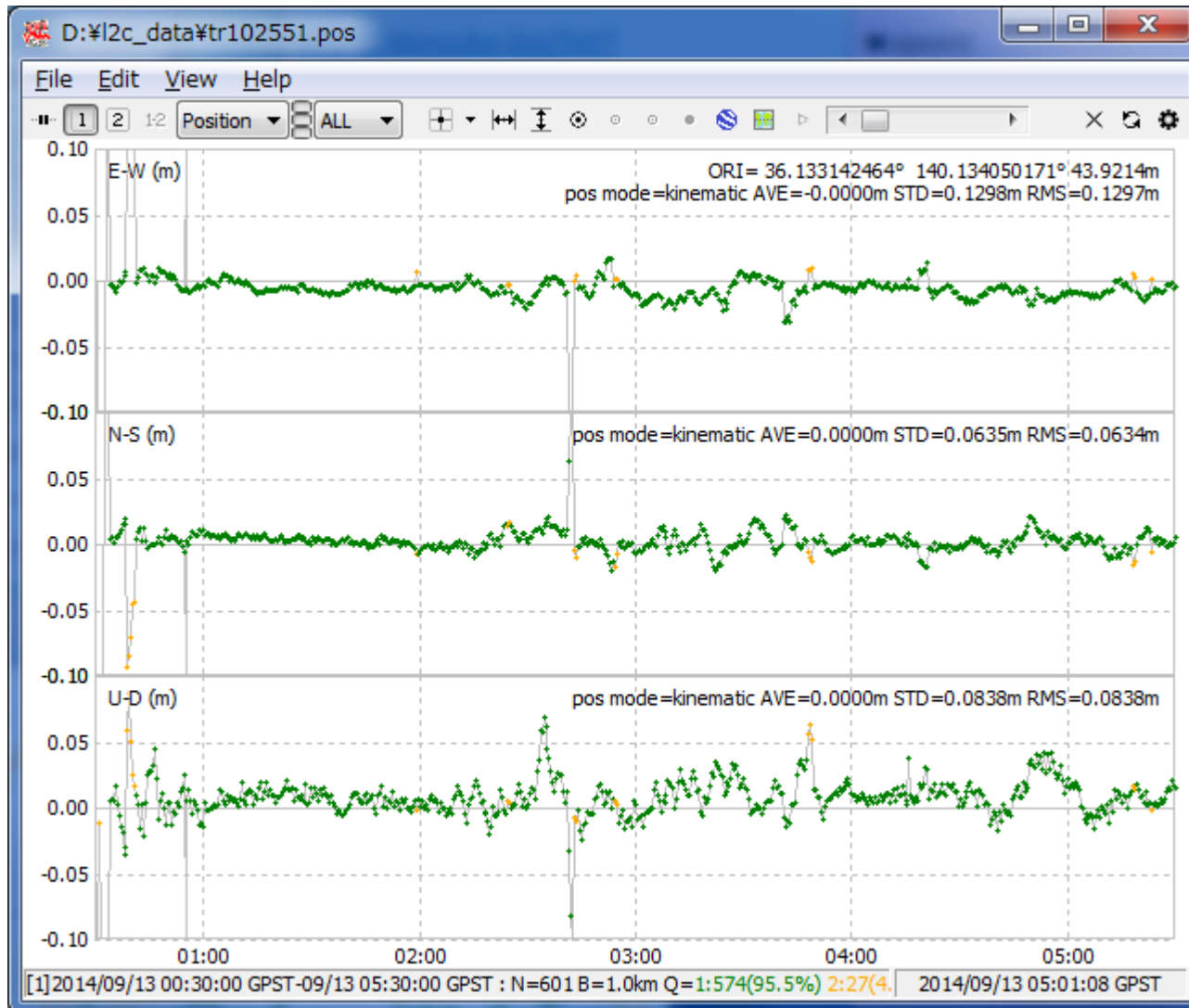
RINEX Opt (Base)

Station ID List

	Rovers	Base Stations
? : Keywords in File Path		
#.: Comment in List		

# 解析結果(サイクルシフト補正あり)

*Options – Setting2 で Phase Cycle shift [Table] を選択*



# 解析結果(サイクルシフト補正なし)

*Options – Setting2 で Phase Cycle Shift [OFF] を選択*

