

Retrieval of location parameter value from imported FLPW maplist

Introduction.

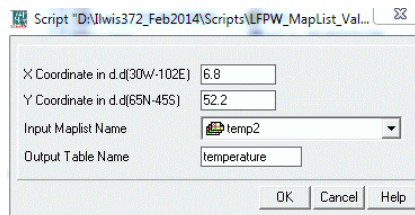
As output from various numerical weather prediction models, like those from ECMWF (in the Meteorological Data Dissemination Service) and from the Arpege model (Meteo France) various parameters are forecasted. This script allows the extraction of an imported maplist containing a parameter time stack based on a 'user defined' location

The script extracts based on the coordinate provided the values from the map list and is creating a table with the values from the time series. For this script the coordinates have to be provided in Degree. Decimals, note that the input maps have 0.5 degree spatial resolution.

Running the script.

Download the ZIP file and copy the "LFPW_location.Zip" file into the ILWIS subdirectory \Scripts and then Unzip the file. Start ILWIS and from the main menu, select the option "Operations" >> "Script" and select the script "LFPW_MapList_Value_Location_Retrieval". From the pop-up script input window specify the input X and Y coordinate, V wind maps and the input map listname name and the output table name, see figure 1.

Figure 1: Input layers needed to calculate wind direction – speed point map and table



Script listing.

```
// retrieve from time series according to specified location the point data
```

```
// using standard window of LFPW from 30 W to 120 E and 65 N to 45 S
```

```
// data is in 0.5 degree resolution
```

```
// Point map used is 'LFPW_location'
```

```
// Assumption is that maplist with LFPW crd and grf files are available in local directory
```

```
//Processing
```

```
!cmd /c copy "%ILWIS_LOCATION%\scripts\LFPW_location.*"
```

```
!cmd /c copy "%ILWIS_LOCATION%\scripts\LFPW.csy"
```

```
tabcalc LFPW_location.mpp Coordinate:=Coord(%2,%1);
```

```
%4_temp.mpp:=PointMapCross(LFPW_location.mpp,%3)
```

```
%4.tbt:=TableTranspose(%4_temp,VALUE,-9999999.90000:9999999.90000:0.00001)
```

```
del %4_temp.* -force
```

```
del LFPW_location.* -force
```

Note: For each maplist for a single user defined location a series of values is extracted. If parameters from different LFPW time series need to be combined in a single table, create a new column (or multiple new columns) in one of the tables and use 'copy and paste' to retrieve the other column(s) from the selected input table(s)

Output.

When the script is completed, a new table has been created. Open the table, here called Temperature, see also figure 1. Display the table, your result should resemble the one in figure 2 and note that in this case the Temperature values are provided under the column with the heading 'pnt 1'. The table index records (towards the left) are showing the maps from which the value was retrieved.

Figure 2: New output table created

	pnt 1
temp2_b_201403130000	2.33800
temp2_c_201403130000	1.59300
temp2_d_201403130000	7.63000
temp2_e_201403130000	13.71800
temp2_f_201403130000	15.20500
temp2_g_201403130000	8.74300
temp2_h_201403130000	5.21600
temp2_i_201403130000	3.58800
temp2_j_201403130000	2.57900
temp2_k_201403130000	1.60800
temp2_l_201403130000	5.55700
temp2_m_201403130000	13.00100
temp2_n_201403130000	13.76100
temp2_o_201403130000	9.65700
temp2_p_201403130000	7.47600
temp2_q_201403130000	6.90200
temp2_r_201403130000	7.67500
temp2_s_201403130000	11.08300
temp2_t_201403130000	8.61600
temp2_u_201403130000	7.13900
temp2_w_201403130000	9.09300
temp2_x_201403130000	9.53900
temp2_v_201403130000	7.06900
Min	1.59300
Max	15.20500
Avg	7.77330
StD	3.92103
Sum	178.78600

Show record temp2_h_201403130000 in record view

Note that the LFPW has a certain temporal resolution, the forecast from B to Q has a three hour interval, afterwards the temporal interval becomes 6 hours, B is representing +3, Q +48 and Y +96. A

new column for the X-Axis, having the correct temporal reference can be calculated as follows. Type on the table command line the following expression:

```
forecast:=%k
```

Press enter and accept all default values and press “OK”. To retrieve only the character representing the forecasting time step, enter the following statement on the table command line:

```
T:=sub(forecast,7,1)
```

Press enter and accept all default values and press “OK”. Note that the ‘domain’ specified is “String’. The expression retrieves a subset of the string, here starting from position ‘7’ and is taking ‘1’ character, resulting in the selection of the appropriate time stamp character.

Now create a column with the correct forecasting character and time stamps as follows; note in the time series not all time steps are available, but in the equation below all the time steps are given:

```
time:=iff(T="b","b+3",iff(T="c","c+6",iff(T="d","d+9",iff(T="e","e+12",iff(T="f","f+15",iff(T="g","g+18",iff(T="h","h+21",iff(T="i","i+24",iff(T="j","j+27",iff(T="k","k+30",iff(T="l","l+33",iff(T="m","m+36",iff(T="n","n+39",iff(T="o","o+42",iff(T="p","p+45",iff(T="q","q+48",iff(T="r","r+54",iff(T="s","s+60",iff(T="t","t+66",iff(T="u","u+72",iff(T="v","v+78",iff(T="w","w+84",iff(T="x","x+90",iff(T="y","y+96",T))))))))))))))))
```

Right click with the mouse on the heading of the newly created column “time” and from the context sensitive menu select the option “Properties” and press the option “Create new Domain from Strings in column”, use default domain name and press “OK”.

Your resulting table should correspond to the figure below. Note the left alignment of the ‘string’ columns and the right alignment of the ‘value’ column.

Figure 3: Table with new columns calculated

	pnt 1	forecast	T	time
temp2_b_2014031:	2.33800	temp2_b_201403130000	b	b+3
temp2_c_2014031:	1.59300	temp2_c_201403130000	c	c+6
temp2_d_2014031:	7.63000	temp2_d_201403130000	d	d+9
temp2_e_2014031:	13.71800	temp2_e_201403130000	e	e+12
temp2_f_2014031:	15.20500	temp2_f_201403130000	f	f+15
temp2_g_2014031:	8.74300	temp2_g_201403130000	g	g+18
temp2_h_2014031:	5.21600	temp2_h_201403130000	h	h+21
temp2_i_2014031:	3.58800	temp2_i_201403130000	i	i+24
temp2_j_2014031:	2.57900	temp2_j_201403130000	j	j+27
temp2_k_2014031:	1.60800	temp2_k_201403130000	k	k+30
temp2_l_2014031:	5.55700	temp2_l_201403130000	l	l+33
temp2_m_2014031:	13.00100	temp2_m_201403130000	m	m+36
temp2_n_2014031:	13.76100	temp2_n_201403130000	n	n+39
temp2_o_2014031:	9.65700	temp2_o_201403130000	o	o+42
temp2_p_2014031:	7.47600	temp2_p_201403130000	p	p+45
temp2_q_2014031:	6.90200	temp2_q_201403130000	q	q+48
temp2_r_2014031:	7.67500	temp2_r_201403130000	r	r+54
temp2_s_2014031:	11.08300	temp2_s_201403130000	s	s+60
temp2_t_2014031:	8.61600	temp2_t_201403130000	t	t+66
temp2_u_2014031:	7.13900	temp2_u_201403130000	u	u+72
temp2_w_2014031:	9.09300	temp2_w_201403130000	w	w+84
temp2_x_2014031:	9.53900	temp2_x_201403130000	x	x+90
temp2_y_2014031:	7.06900	temp2_y_201403130000	y	y+96
Min	1.59300			
Max	15.20500			
Avg	7.77330			
StD	3.92103			

Column "pnt1"

Activate the option “Graph” by selecting the ‘graphic icon’ from the table menu. As X-axis select the column “time” and as Y-axis the column “pnt 1” and press “OK”. Now you can modify the layout and representation of your graph. For an example see the figure below.

Figure 4: Resulting graph

