

Count on General Acoustics' Tide Prediction!



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## TidePredictor



TidePredictor is a powerful tool that allows analysis of tide measurements, calculation of harmonic contents, incorporation of wind speed, wind speed and barometric pressure data and produces tide prediction based on harmonic analysis as well as tide prediction based on extended algorithms with advanced suppression of surge and extreme measurement values.

TidePredictor guides the user in a step by step procedure, and is thus suitable for both inexperienced but also experienced users (who can use advanced options to optimally configure the processing).

With the comprehensive import function the user can import data from various tide gauge types.

The one-click export functions produce report and website ready graphics and tables, simplifying data dissemination procedures and saving time.

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# Tidal Data - Import of Tide Gauge Data




File Extras View Help


Execution Map:

- Advanced Parameters »
  - Preprocessing
  - Level Resampling
- Tidal Analysis
  - Latitude
  - Analysis Results
    - Report
    - Constituents Table
    - Constituents Graph
    - Elevations Graph
    - Tidal Datum Graph
- Tide Prediction
  - Time and Location
  - Prediction Results
    - Elevation Graph
    - Elevation Table
    - Tidal Calendar


### Preprocessing

Input Filename

Elevations data file:  

Load always  Csv Tool...

Output Filename


Time series file:  

Auto save  Overwrite warning

### Input Filename

For tide prediction an appropriate database over a long time is required. You should use elevation data from about half a year for minimum at a sample rate of about 5 minutes.

Take care of not having too large gaps with invalid data. Small gaps of hours are no problem.

Execute 

# Tidal Analysis - Report



File Extras View Help

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### Tidal Analysis: Report

Textual Results Output

Text file:

Auto save     Overwrite warning

```

date: 23-Feb-2015
nobs = 78145,  ngood = 78145,  record length (days) = 54.27
start time: 18-Dec-2014 05:43:00
rayleigh criterion = 1.0
Greenwich phase computed, no nodal corrections

x0= -0.514,  x trend= 0

var(x)= 0.8042  var(xp)= 0.75426  var(xres)= 0.049303
percent var predicted/var original= 93.8%

      tidal amplitude and phase with 95% CI estimates

```

tide	freq	amp	amp_err	pha	pha_err	snr
MM	0.0015122	0.0670	0.124	119.56	123.08	0.29
MSF	0.0028219	0.0351	0.103	159.92	181.85	0.12

Execute

# Tidal Analysis - Constituents Table



TidePredictor - Kuwait.tpp

File Extras View Help

Execution Map:

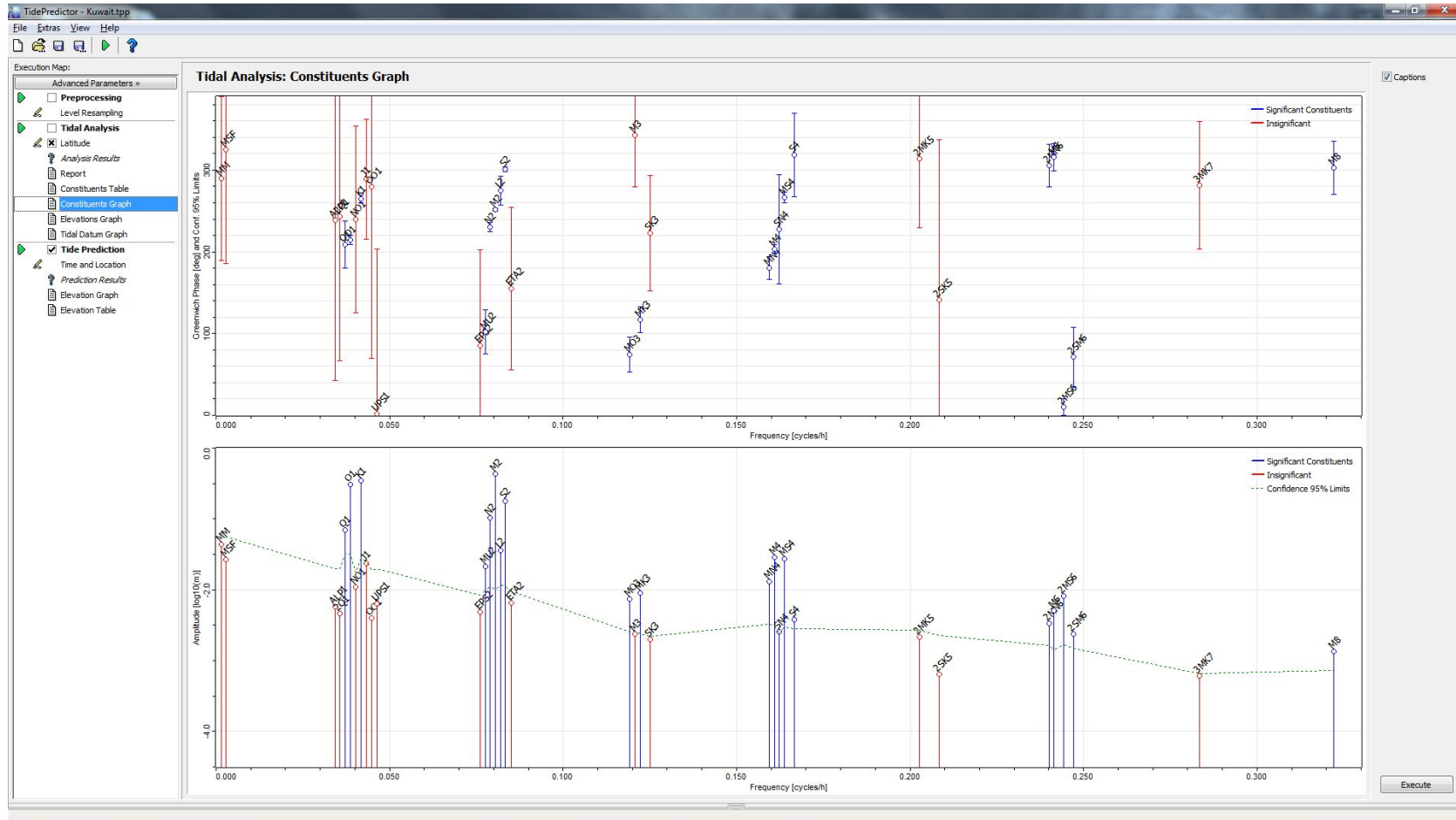
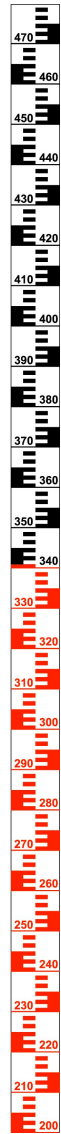
- Advanced Parameters >>
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**Tidal Analysis: Constituents Table**

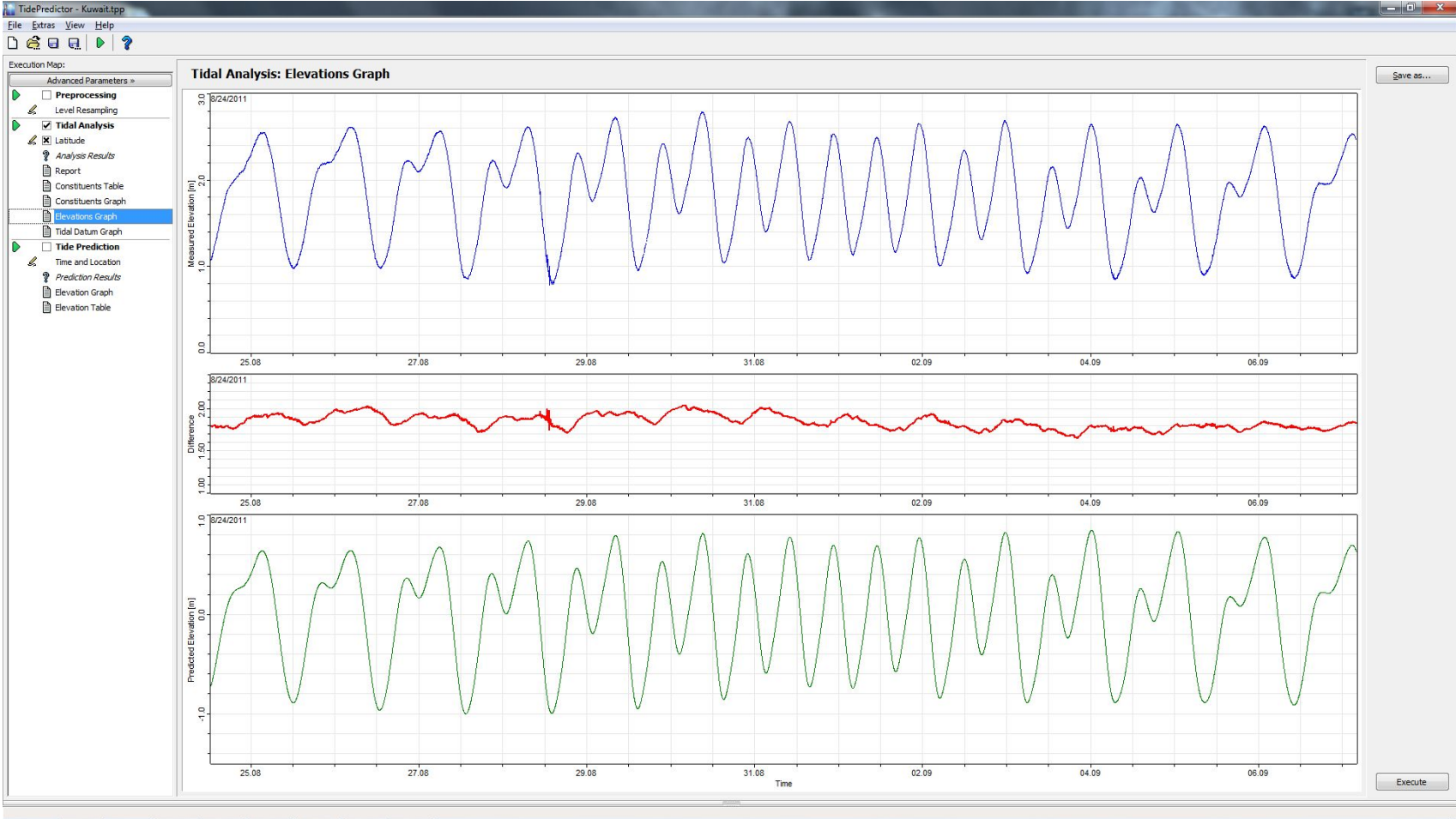
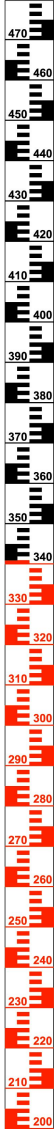
Name	Amplitude [m]	Frequency [cycles/hour]	Phase [deg]	Amplitude Error [m]	Phase Error [deg]	SNR
1 MM	0.0440	0.0015	289.7	0.0640	100.2	0.47
2 MSF	0.0264	0.0028	325.2	0.0562	139.1	0.22
3 ALP1	0.0058	0.0344	238.9	0.0198	196.1	0.08
4 2Q1	0.0046	0.0357	243.2	0.0196	176.3	0.06
5 Q1	0.0694	0.0372	208.5	0.0319	28.6	4.72
6 O1	0.3062	0.0387	214.4	0.0316	5.4	94.11
7 NO1	0.0109	0.0403	239.4	0.0176	114.1	0.39
8 K1	0.3459	0.0418	264.9	0.0279	4.7	153.38
9 J1	0.0235	0.0433	288.7	0.0250	73.1	0.89
10 OO1	0.0040	0.0448	279.1	0.0190	209.7	0.04
11 UPS1	0.0064	0.0463	1.8	0.0198	201.1	0.10
12 EPS2	0.0048	0.0762	85.2	0.0084	117.4	0.32
13 MU2	0.0216	0.0777	102.5	0.0100	27.2	4.67
14 N2	0.1033	0.0790	230.7	0.0109	5.5	89.69
15 M2	0.4273	0.0805	251.7	0.0100	1.5	1809.15
16 L2	0.0360	0.0820	274.7	0.0115	17.5	9.85
17 S2	0.1764	0.0833	301.1	0.0113	3.2	242.03
18 ETA2	0.0065	0.0851	154.8	0.0094	99.3	0.47
19 MO3	0.0074	0.1192	73.9	0.0026	21.1	8.24
20 M3	0.0024	0.1208	343.0	0.0027	63.1	0.77
21 MK3	0.0090	0.1223	117.4	0.0024	15.4	14.13
22 SK3	0.0020	0.1251	222.6	0.0022	70.6	0.83
23 MN4	0.0129	0.1595	179.8	0.0033	14.2	15.20
24 M4	0.0285	0.1610	203.6	0.0031	5.9	86.21
25 SN4	0.0026	0.1623	227.9	0.0025	66.9	1.05
26 MS4	0.0275	0.1638	266.8	0.0030	6.1	86.33
27 S4	0.0038	0.1667	319.0	0.0028	51.2	1.86
28 2MK5	0.0021	0.2028	313.5	0.0027	84.5	0.64
29 2SK5	0.0006	0.2084	140.9	0.0022	195.6	0.08
30 2MN6	0.0034	0.2400	305.6	0.0016	25.7	4.31
31 M6	0.0051	0.2415	315.8	0.0014	16.5	12.93
32 2MS6	0.0081	0.2444	10.2	0.0017	10.6	22.67
33 2SM6	0.0024	0.2472	71.7	0.0015	36.0	2.59
34 3MK7	0.0006	0.2833	281.7	0.0007	77.9	0.86
35 M8	0.0013	0.3220	303.1	0.0007	32.4	3.53

Save as... Execute

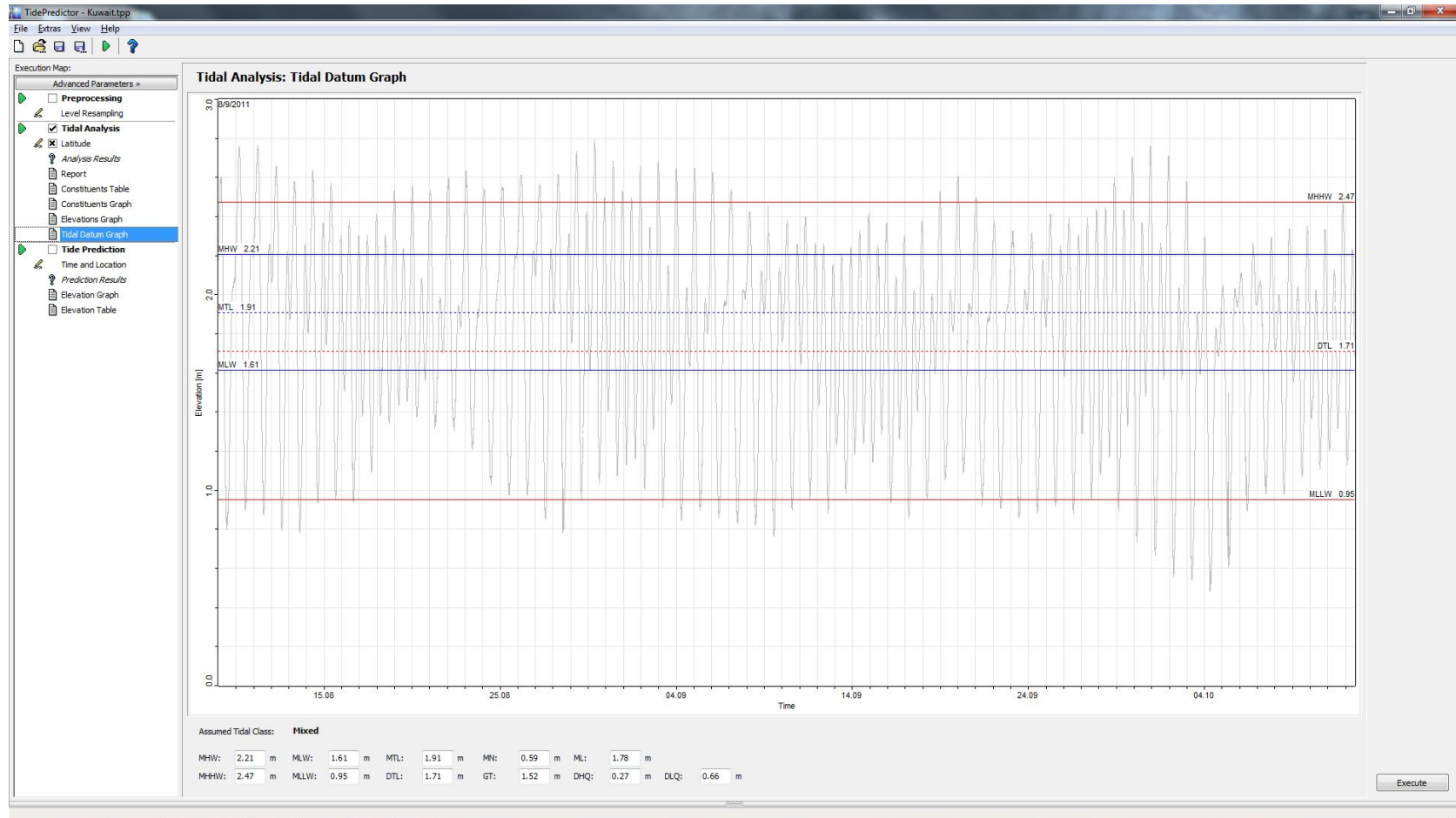
# Tidal Analysis - Constituents Graph



# Tidal Analysis - Elevations Graph



# Tidal Analysis - Tidal Datum Graph





# Tide Prediction - Configuration

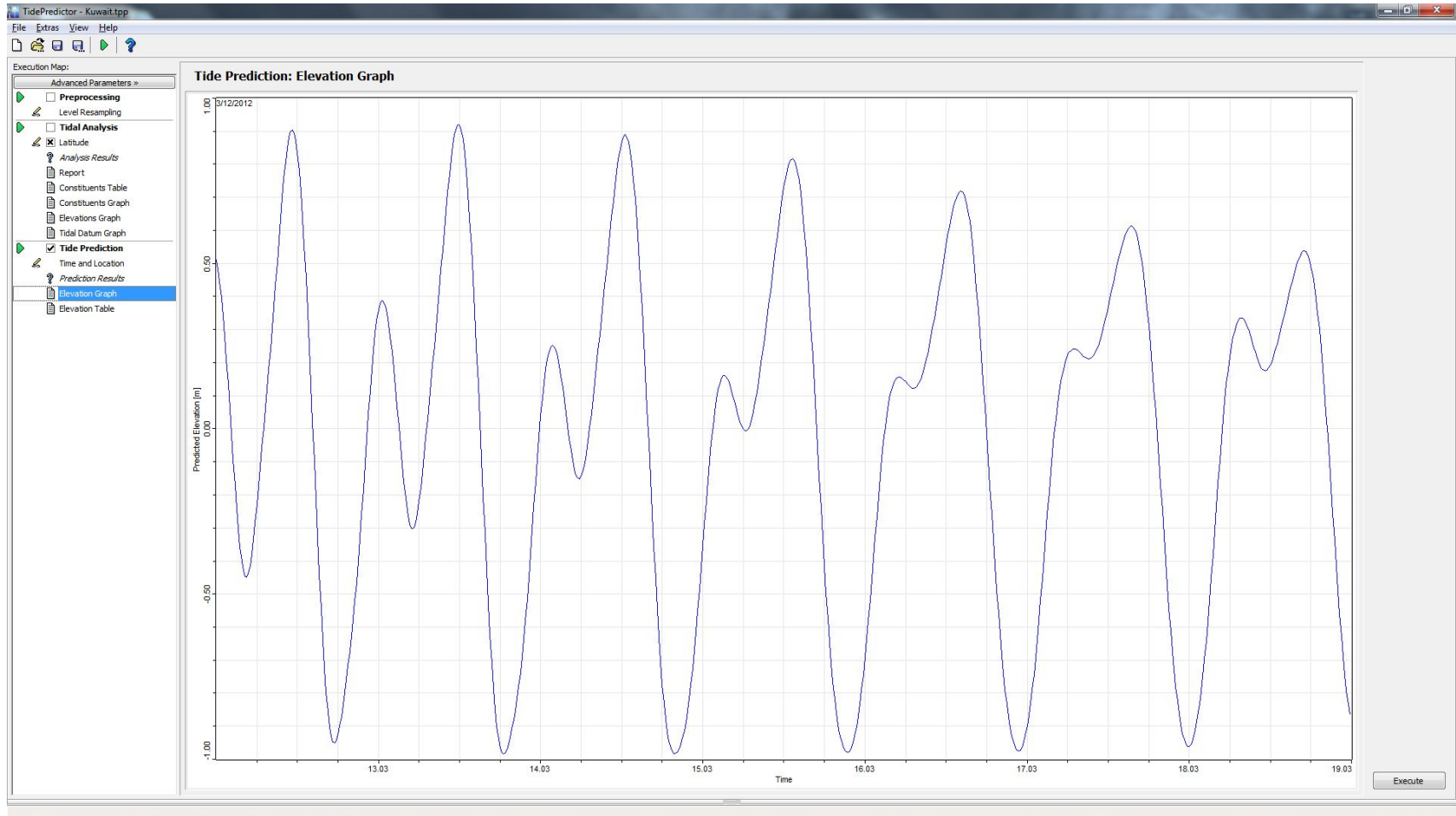


The screenshot shows the 'TidePredictor - Kuwait.tpp' application window. The menu bar includes 'File', 'Extras', 'View', and 'Help'. The toolbar contains icons for file operations and execution. The 'Execution Map' on the left lists several steps: 'Preprocessing' (unchecked), 'Tidal Analysis' (unchecked), 'Tide Prediction' (checked), and 'Time and Location' (highlighted). Under 'Tide Prediction', there are sub-items for 'Analysis Results', 'Report', 'Constituents Table', 'Constituents Graph', 'Elevations Graph', and 'Tidal Datum Graph'. Under 'Time and Location', there are sub-items for 'Prediction Results', 'Elevation Graph', and 'Elevation Table'. The main panel is titled 'Tide Prediction: Time and Location' and contains the following configuration options:

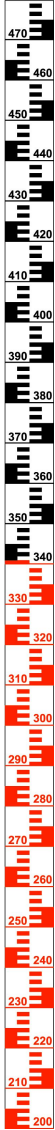
- Time Period:**
  - Begin: 03/12/2012 (with a 'Now' button) MM/DD/YYYY
  - Period: 7 Days
  - Resolution: 15 Minutes (15 is a good choice)
- Location:**
  - Latitude: [ ] i.e. 53°40'12" N or 53.67
  - Use latitude from analysis
  - Longitude\*: [ ] i.e. 9°10'23" E or -9.173
  - \*for documentation only

An 'Execute' button is located at the bottom right of the configuration panel.

# Tide Prediction Visualization



# Tide Prediction Table Export



TidePredictor - Kuwait.tpp

File Extras View Help

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**Tide Prediction: Elevation Table**

	Date	Level [m]
1	03/12/2012 00:00	0.512
2	03/12/2012 00:15	0.484
3	03/12/2012 00:30	0.445
4	03/12/2012 00:45	0.398
5	03/12/2012 01:00	0.342
6	03/12/2012 01:15	0.279
7	03/12/2012 01:30	0.210
8	03/12/2012 01:45	0.137
9	03/12/2012 02:00	0.060
10	03/12/2012 02:15	-0.017
11	03/12/2012 02:30	-0.095
12	03/12/2012 02:45	-0.170
13	03/12/2012 03:00	-0.240
14	03/12/2012 03:15	-0.303
15	03/12/2012 03:30	-0.358
16	03/12/2012 03:45	-0.401
17	03/12/2012 04:00	-0.431
18	03/12/2012 04:15	-0.447
19	03/12/2012 04:30	-0.450
20	03/12/2012 04:45	-0.438
21	03/12/2012 05:00	-0.414
22	03/12/2012 05:15	-0.380
23	03/12/2012 05:30	-0.336
24	03/12/2012 05:45	-0.286
25	03/12/2012 06:00	-0.231
26	03/12/2012 06:15	-0.173
27	03/12/2012 06:30	-0.114
28	03/12/2012 06:45	-0.055
29	03/12/2012 07:00	0.003
30	03/12/2012 07:15	0.062
31	03/12/2012 07:30	0.121
32	03/12/2012 07:45	0.180
33	03/12/2012 08:00	0.241
34	03/12/2012 08:15	0.304
35	03/12/2012 08:30	0.368
36	03/12/2012 08:45	0.435
37	03/12/2012 09:00	0.502
38	03/12/2012 09:15	0.570
39	03/12/2012 09:30	0.636
40	03/12/2012 09:45	0.699
41	03/12/2012 10:00	0.757
42	03/12/2012 10:15	0.808
43	03/12/2012 10:30	0.850
44	03/12/2012 10:45	0.881
45	03/12/2012 11:00	0.900
46	03/12/2012 11:15	0.905
47	03/12/2012 11:30	0.896

Save as...

Execute