

DEPxe Quick Guide

Introduction

DEPxe¹ is an add-on build for Theme 6.0 that enables automatic and manual conversion / event basing, visualization and analysis of time-stamped continuous financial and economic data. Data can be imported as csv files or from online databases. There are currently four different event triggers available: Manual Trigger, Min/Max Trigger, Standard Deviation Trigger and a Level Trigger.

Event Triggers

There are currently four different event triggers available

1. Manual Trigger
2. Min/Max Trigger
3. Standard Deviation Trigger
4. Level Trigger

All these triggers can be used to trigger events for sampled data represented by time series. All the triggers except the “Manual Trigger” will automatically create events using a method specific to the trigger. The “Manual Trigger” on the other hand stores events that are manually selected by clicking points on a graphical representation of the time series data.

Manual Trigger

This trigger is self-explanatory. It just holds the time values of user-defined events that are manually selected from a chart containing a plot of the time series data. These values can be serialized along with the triggers configuration. When applied it will create Theme events at the stored time values.

Min/Max Trigger

The Min / Max Trigger finds all the local maxima and minima in the time series data. Theme Modifiers are used to represent the two possible conditions (MIN / MAX). The modifiers are named MODMIN and MODMAX by default, but their names are configurable. When applied, it will trigger Theme events that can be serialized directly to a Theme file. Events here are stateless, i.e. points.

Standard Deviation Trigger

The Standard Deviation Trigger uses the calculated standard deviation and the mean value of the time series data. Events created by this trigger are always stateful and only exist as pairs, i.e. one with a start state and the other with an end state. Event starts when the time series data values enter a region of values that lie within the standard deviation and end when exited.

Level Trigger

The Level / Trigger calculates level values from minima and maxima of the series data and the number of levels to be used. Theme Modifiers are used to represent each level and are named MOD1 to MODN where N is the number of levels. Stateless Theme events are created when each level is entered and are identified by the associated modifier.

Filters

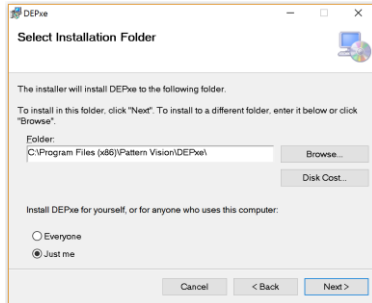
Filters can be used to pre-process the time series in various ways before the triggers are applied.

¹ The development of Theme EcoScope was supported by the Icelandic Technology Development Fund.

1. Subtract / add values to the time series values. The values subtracted/added are generated by configurable functions. An example is a sinusoidal function to remove periodic changes or a straight line to cancel out a rising trend.
2. Low pass and high pass filters are available to remove high frequency noise or to remove very slow changes that may affect the analysis.

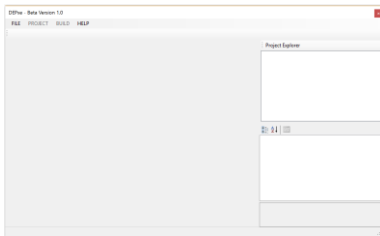
Installation

Run the setup file and install in the default folder.

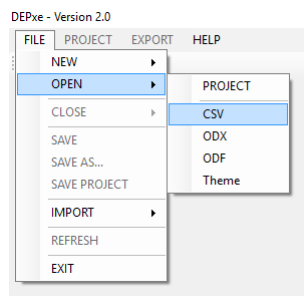


Steps

Start the program from Programs/Pattern Vision/DEP. A blank form will appear.

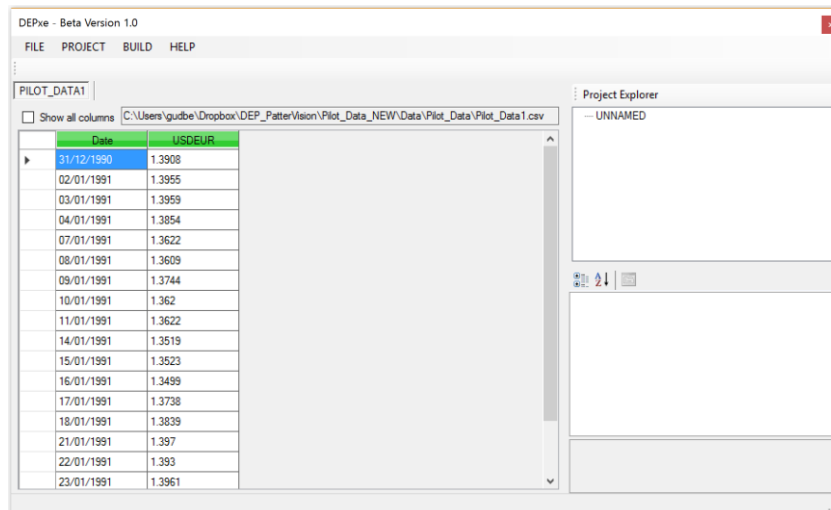


Create Theme from sampled data in a CSV file



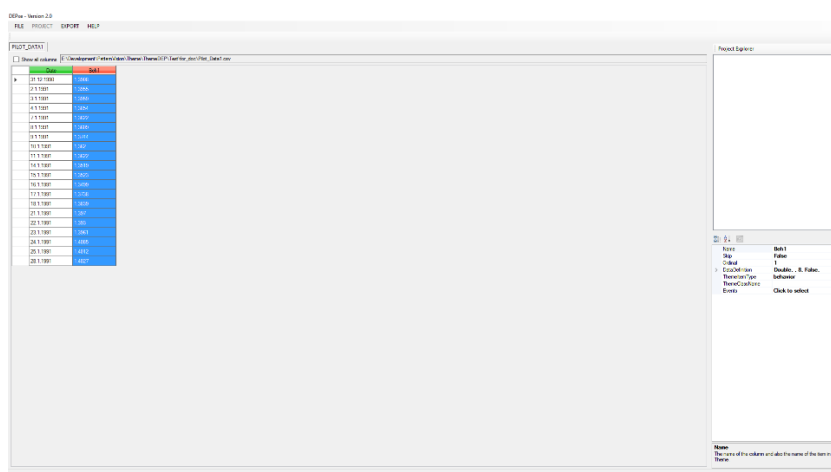
Select the csv file to be exported.

The file will open and available columns displayed. If the file is being opened for the first time, DEPxe will try to determine the data type and theme type of each column.

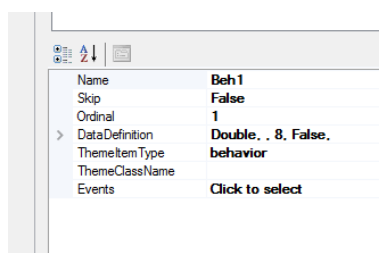


Only the first few lines of the data in the file will be displayed.

Selecting a column will display it's properties in the properties window at the bottom right.

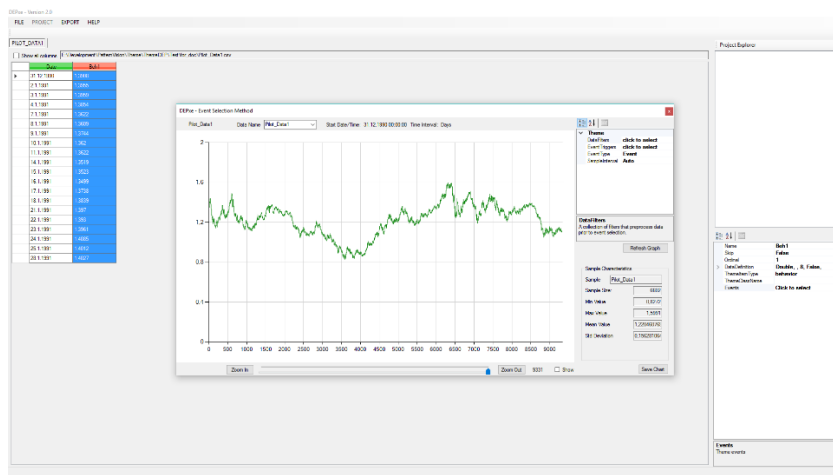


When the column containing the values that represent the behaviour data is selected the following properties are displayed.

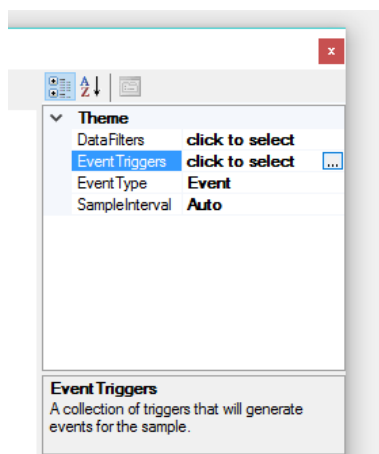


At this point no events have yet been selected. This is done by clicking the Events in the properties window.

A chart representing the data will be displayed.



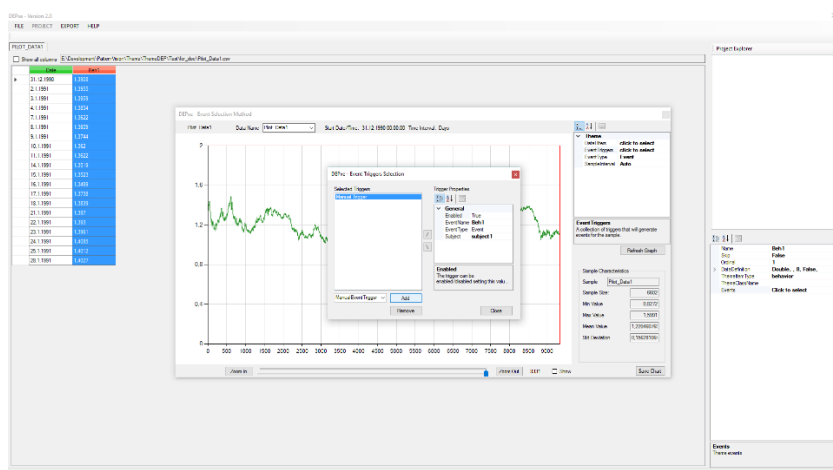
In the top right corner of the chart dialog the data filters and event triggers can be selected.



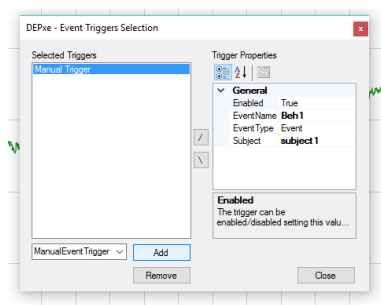
Triggers generate events automatically from the sample, apart from one trigger that allows users to select events manually, all depending on their type and settings.

Manual Trigger

First select a Manual Trigger by clicking the Event Triggers as shown.

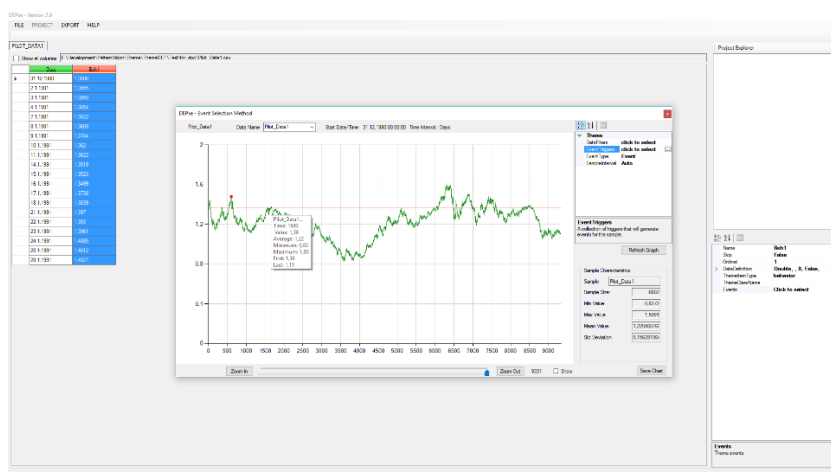


A new dialog appears where new triggers can be selected. Select Manual Trigger.

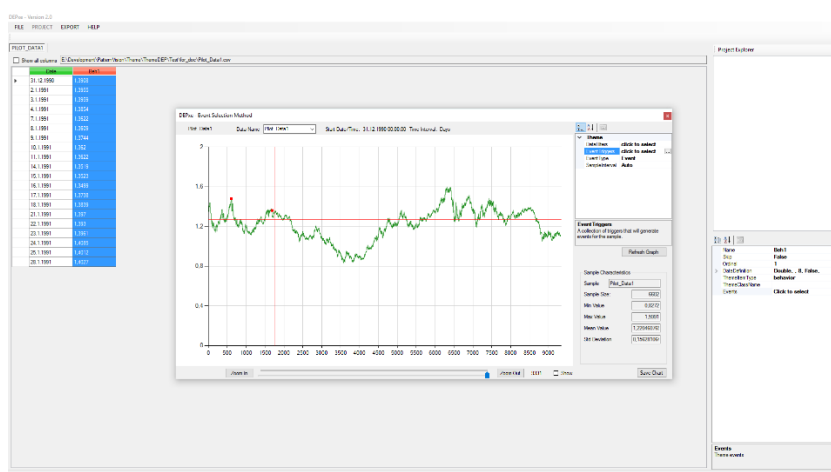


The event name, event type and the subject it belongs to can be modified.

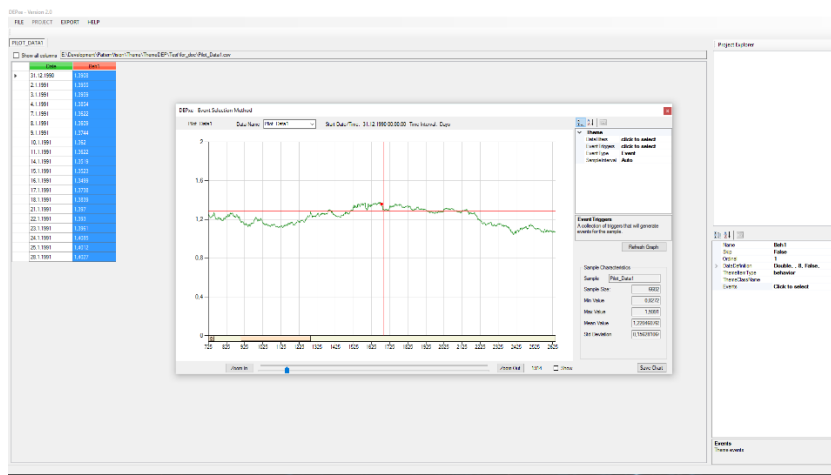
Close the dialog, and now events can be added to the sample simply by clicking on the chart.



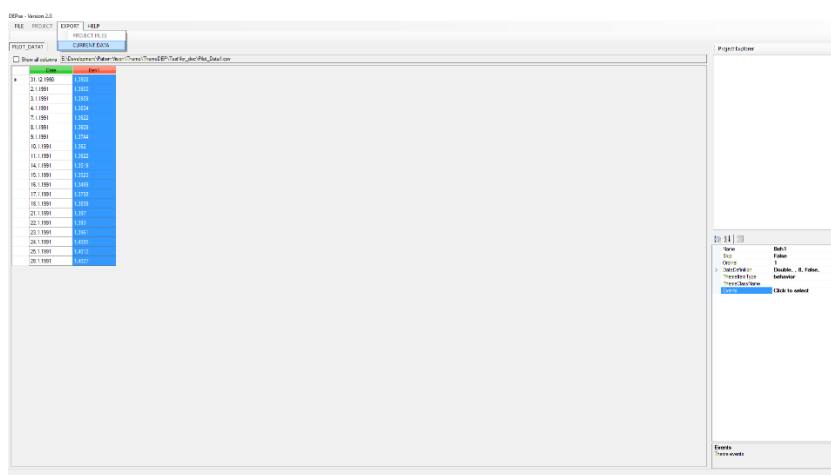
In the following chart several stateless events have been selected.



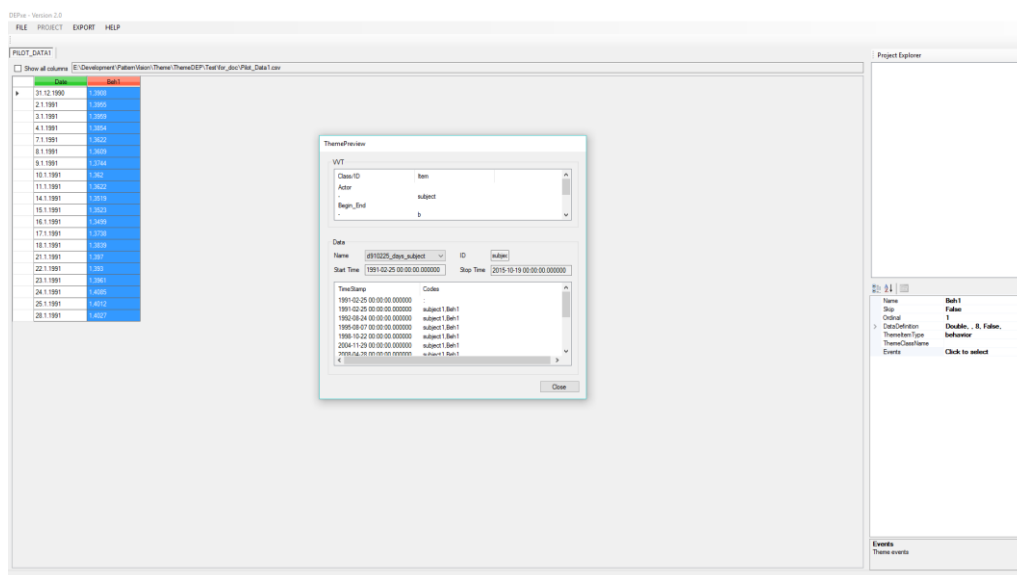
The chart graph can be zoomed (in and out) by using the slider at the bottom. This may be necessary for large data sets, so events can be selected on correct data points. Short lived fluctuations may only be visible when zoomed in as well.



When triggers and event filters have been selected the data is ready for being exported to Theme.



Select EXPORT / CURRENT_DATE and when processing finishes a dialog with the results will pop-up.



ThemePreview

WT

Class/ID	Item
Actor	
-	subject
Begin_End	
-	b

Data

Name

d910225_days_subject

ID

subject

Start Time

1991-02-25 00:00:00.000000

Stop Time

2015-10-19 00:00:00.000000

TimeStamp	Codes
1991-02-25 00:00:00.000000	:
1991-02-25 00:00:00.000000	subject1.Beh1
1992-08-24 00:00:00.000000	subject1.Beh1
1995-08-07 00:00:00.000000	subject1.Beh1
1998-10-22 00:00:00.000000	subject1.Beh1
2004-11-29 00:00:00.000000	subject1.Beh1
2008-04-28 00:00:00.000000	subject1.Beh1

Close

Import data to Theme and analysis

See Theme 6.0 manual.