05 Correlation Display

Five configuration files are involved to enable the peak heights functionality:

- Topology (RegionConfigFiles)
  It lists all the peak height stations for which the correlation display should be shown. Only the forecast stations (mostly the downstream locations) should be listed. When a station for which a peak heights relation exist is listed in the forecast tree, the correlation display is automatically activated.
- DisplayGroups (RegionConfigFiles)
  The DisplayGroup file contains a list with related locations for each Peakheights station as defined in Topology, with reference to a defined display (plotId).
- TravelTimes configuration (TravelTimesFiles)
  A station can sometimes appear as forecast location (DS), sometimes as support (US) location. One forecast location may be correlated with multiple support locations. All support parameters for a single forecast location must have the same parameters. It is important to check that a locationId has the same name attached at all occurrences in the TravelTimeSets configuration file. Having multiple names for the same locationId will result in an error in the Delft-FEWS GUI.
- CorrelationEventSets (CorrelationEventSetsFiles)
  Definition of the events used in establishing a correlation between locations
- CorrelationDisplay (DisplayConfigFiles) - this wiki page
  Links the correct CorreltationEvents and PeakheightsTravelTimes configuration files and set the type of matching to be used to link events (i.e. SelectionType). When the SelectionType is set the "combined" for the forecast location the behavior will be as follows:
  - Events are first matched on "eventId" and if these are missing, matching takes additionally place based on "travel time" (OR relation).
  - Events that have a mismatch based on travel time, but do have an EventId match will be part of the selection.
  - Events that have a match based on travel time, but do not have an EventId match will be part of the selection.
    The selection in the GUI can be refined using the filter options in the display.

Correlation display

The correlation display is a display plug-in that extends the correlation module functionality. The display allows the user to interactively establish correlation between upstream and downstream locations and derive a forecast based on these correlations.

For each correlation display to be used interactively, the configuration included only the definition of the correlationEventSets to be used. The layout of the display cannot be configured.

The Id of the correlation display is identified in the DisplayInstanceDescriptors. When available on the file system, the name of the XML file for configuring the display with an Id of e.g. Correlationdisplay is for example:

Correlationdisplay 1.00 default.xml

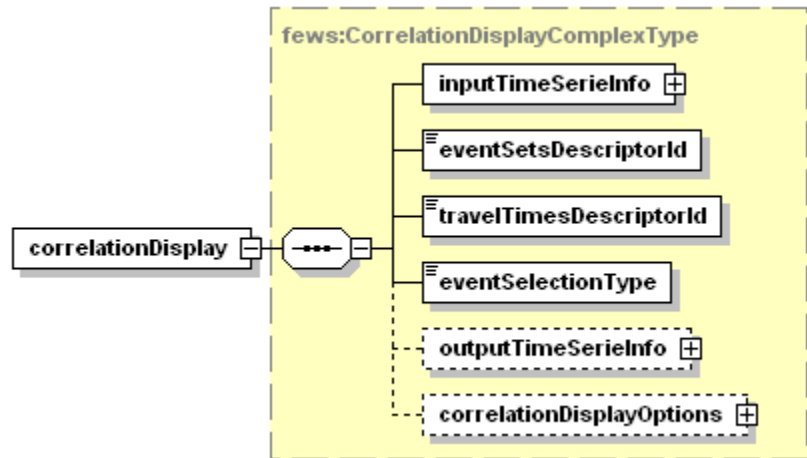| Correlationdisplay	File name for the Correlationdisplay configuration
1.00	Version number
default	Flag to indicate the version is the default configuration (otherwise omitted).

Figure 153 Root elements of the configuration display configuration.

inputTimeSerieInfo

TimeSeriesSet defined for the input data. This time series set is used when applying the correlation established to a complete hydrograph.

eventSetsDescriptorId

Id of the correlationEventSets to be used in the display. The event set must be defined in the CorrelationEventSets configuration (See CorrelationEventSetsFiles\ Configuration).

travelTimesDescriptorId

Id of the travelTimes to be used in the display. The mimimum and maximum allowed travel times must be defined in the travelTimes configuration (See TravelTimesFiles\ Configuration).

outputTimeSerieInfo

TimeSeriesSet defined for the output data. This time series set is used only for displaying the temporary time series to be displayed when applying the correlation established to a complete hydrograph. This time series is not saved in the database.

correlationDisplayOptions

Root element of options element for setting line colours in the scatter plot.
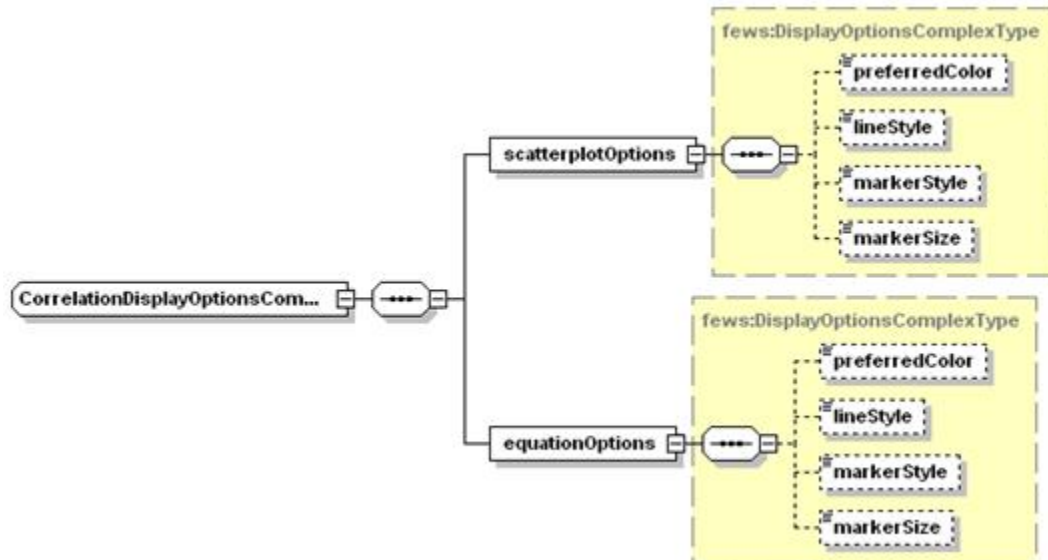

Figure 154 Elements of the scatterplot item in the CorrelationDisplay configuration

scatterplotOptions

Options for setting the properties of the scatter plot. The lineStyle of the scatter plot is "none" by definition (need not be defined).

Thresholds can be made invisible by configuring <thresholds visible"false/> this will apply to scatter plot as well as travel times plot.

equationOptions

Options for setting the properties of the regression line determined with the equation established.

preferredColor

Preferred colour for plotting scatter plot / regression line. For enumeration see timeSeriesDisplay Configuration in System Configuration.

markerStyle

Marker style for scatter plot / regression line. For enumeration see timeSeriesDisplay Configuration in System Configuration.

markerSize

Marker size for scatter plot / regression line in points.