

# EventsDischargeVolume

## Information

Transformation:	DischargeVolume
Transformation Group:	Events
Description:	Calculates either the discharge volume of <i>all events</i> initiated in the output period or only the discharge volume of the <i>largest event</i> initiated in the output period. An <i>event</i> in this transformation is defined as a the largest possible series of subsequent subevents where the duration of gaps (where there are no subevents) is shorter than the specified <b>maxGapDuration</b> parameter. A <i>subevent</i> is defined as a measurement in time in the input where the value is larger than the specified <b>threshold</b> parameter. The discharge volume of a subevent is calculated by multiplying the input value (m3/s) by the duration of the input time step (s). The discharge volume for an event is the sum of the discharge volumes for its subevents, and is registered only in the output period where the event initiated.

## Hydrological Information

Purpose and use of Transformation:	This transformation can for instance be used to report discharge volume statistics on sewer spillage for each month.
Background and Exceptions:	The unit of the input must be m3/s. The output time step must be bigger than the input time step. All input values must be non-missings, otherwise the result will be set to <i>missing value</i> . In case one of the inputs is doubtful, the output flag is set to ORIGINAL_DOUBTFUL.

## Input

**discharge** Equidistant measurements in m3/s.

## Options

**eventSelection** Selects either discharge volume of all events or only the discharge volume of the event with the largest discharge volume.

**threshold** Only measurements are used with a value above this value. Default is 0.

**maxGapDuration** When there is a gap between two subsequent subevents exceeding this duration, these subevents belong to two separate events. Default is 24 hours.

## CoefficientSets

No connection to CoefficientSets.

## Output

**volume** Aggregated volume of the selected events in m3.

## Configuration Example

Configuration example for discharge volume of events for each month.

```

<?xml version="1.0" encoding="UTF-8"?>
<transformationModule version="1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns="http://www.wldelft.nl/fews"
    xsi:schemaLocation="http://www.wldelft.nl/fews http://fews.wldelft.nl/schemas/version1.0
/transformationModule.xsd">

    <!-- input variables -->
    <!-- output variables -->
    <!-- transformations -->
    <transformation id="events dischargeVolumeAllEvents">
        <events>
            <dischargeVolume>
                <discharge>
                    <timeSeriesSet>
                        <moduleInstanceId>EventsDischargeVolume_AllEvents<
/moduleInstanceId>

                            <valueType>scalar</valueType>
                            <parameterId>Q.dis</parameterId>
                            <locationId>H-2001</locationId>
                            <timeSeriesType>external historical</timeSeriesType>
                            <timeStep unit="hour" multiplier="6"/>
                            <relativeViewPeriod unit="day" start="0" end="113"/>
                            <readWriteMode>editing visible to all future task runs<
/moduleInstanceId>

                                </timeSeriesSet>
                            </discharge>
                            <eventSelection>all_events</eventSelection>
                            <volume>
                                <timeSeriesSet>
                                    <moduleInstanceId>EventsDischargeVolume_AllEvents<
/moduleInstanceId>

                                        <valueType>scalar</valueType>
                                        <parameterId>Q.arg</parameterId>
                                        <locationId>H-2001</locationId>
                                        <timeSeriesType>external historical</timeSeriesType>
                                        <timeStep monthDays="--01-01 --02-01 --03-01 --04-01 --05-01
--06-01 --07-01 --08-01 --09-01 --10-01 --11-01 --12-01" />
                                        <relativeViewPeriod unit="day" start="0" end="113"/>
                                        <readWriteMode>add originals</readWriteMode>
                                    </timeSeriesSet>
                                </volume>
                            </dischargeVolume>
                        </events>
                    </transformation>
                </transformationModule>

```

*Configuration example for discharge volume of the largest event of each month.*

```

<?xml version="1.0" encoding="UTF-8"?>
<transformationModule version="1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns="http://www.wldelft.nl/fews"
    xsi:schemaLocation="http://www.wldelft.nl/fews http://fews.wldelft.nl/schemas/version1.0
/transformationModule.xsd">
    <!-- input variables -->
    <!-- output variables -->
    <!-- transformations -->
    <transformation id="events dischargeVolume largest event">
        <events>
            <dischargeVolume>
                <discharge>
                    <timeSeriesSet>
                        <moduleInstanceId>EventsDischargeVolume_LargestEvent<
/moduleInstanceId>

                        <valueType>scalar</valueType>
                        <parameterId>Q.dis</parameterId>
                        <locationId>H-2001</locationId>
                        <timeSeriesType>external historical</timeSeriesType>
                        <timeStep unit="hour" multiplier="6"/>
                        <relativeViewPeriod unit="day" start="0" end="113"/>
                        <readWriteMode>editing visible to all future task runs<
/readWriteMode>

                    </timeSeriesSet>
                </discharge>
                <eventSelection>largest_volume_event</eventSelection>
                <volume>
                    <timeSeriesSet>
                        <moduleInstanceId>EventsDischargeVolume_LargestEventTest<
/moduleInstanceId>

                        <valueType>scalar</valueType>
                        <parameterId>Q.arg</parameterId>
                        <locationId>H-2001</locationId>
                        <timeSeriesType>external historical</timeSeriesType>
                        <timeStep monthDays="--01-01 --02-01 --03-01 --04-01 --05-01
--06-01 --07-01 --08-01 --09-01 --10-01 --11-01 --12-01" />
                        <relativeViewPeriod unit="day" start="0" end="113"/>
                        <readWriteMode>add originals</readWriteMode>
                    </timeSeriesSet>
                </volume>
            </dischargeVolume>
        </events>
    </transformation>
</transformationModule>

```