

InterpolationSpatialVerticalProfileClosestDistance

Transformation - InterpolationSpatial VerticalProfileClosestDistance

schema:	transformationModule.xsd
keywords:	transformation, spatial interpolation, closest distance, vertical profile

Description and usage

This transformation converts one or more 2d grid layers to vertical profiles.

For each output vertical profile time series the x,y coordinates of its configured location are used to slice the input 2d grid layer time series to create a vertical profile. For each output x,y coordinate the corresponding values in the input grids are found using closest distance interpolation within the specified search radius (optional). The z-coordinates of the values in the output vertical profiles are the same as the z-coordinates of the input grid layers.

Input/Output time series

Input: one or more horizontal 2D grid time series (layers), that together form one 3D grid time series.

Output: one or more vertical profile time series.

Configuration

A basic configuration of the function is described below. This describes the main elements and attributes required and provides an example configuration.

inputVariable

One or more horizontal 2D grid time series (layers) (in a locationSet), that together form one 3D grid time series. All input grid time series must have the same grid geometry.

searchRadius

Optional search radius in meters for closest distance interpolation. Default is infinity.

distanceGeoDatum

Geo datum used to calculate the distances in meters between the points. To calculate distances efficiently and to pre-sort the input points in a grid the earth's curved surface should be transformed to a flat two-dimensional surface. When the input geometry is not in meters calculation of distances will be very slow and a search all is required when there is no exact match. When there is no region/country specific coordinate system available choose a utm zone that best fits with your output region. <http://en.wikipedia.org/wiki/File:Utm-zones.jpg>. eg. UTM55S for Victoria state in Australia. Only use zone number and N for northern hemisphere and S for southern hemisphere.

outputVariable

One or more vertical profile time series (in a locationSet). The output must have a single domain parameter that indicates the height along the vertical profile.

Example

```

<!-- input variable with a locationSet that contains one grid location for each horizontal layer -->
<variable>
  <variableId>input</variableId>
  <timeSeriesSet>
    <moduleInstanceId>InterpolationSpatialVerticalProfileClosestDistanceTest</moduleInstanceId>
    <valueType>grid</valueType>
    <parameterId>H.m</parameterId>
    <locationSetId>gridLayersLocationSet</locationSetId>
    <timeSeriesType>external historical</timeSeriesType>
    <timeStep unit="day"/>
    <relativeViewPeriod unit="day" start="0" end="6"/>
    <readWriteMode>add originals</readWriteMode>
  </timeSeriesSet>
</variable>
<!-- output variable with a locationSet that contains one location for each vertical profile -->
<variable>
  <variableId>output</variableId>
  <timeSeriesSet>
    <moduleInstanceId>InterpolationSpatialVerticalProfileClosestDistanceTest</moduleInstanceId>
    <valueType>scalar</valueType>
    <parameterId>H.m</parameterId>
    <domainParameterId>height</domainParameterId>
    <locationSetId>verticalProfileLocationSet</locationSetId>
    <timeSeriesType>external historical</timeSeriesType>
    <timeStep unit="day"/>
    <relativeViewPeriod unit="day" start="0" end="6"/>
    <readWriteMode>add originals</readWriteMode>
  </timeSeriesSet>
</variable>
<transformation id="InterpolationSpatialVerticalProfileClosestDistanceTest">
  <interpolationSpatial>
    <verticalProfileClosestDistance>
      <inputVariable>
        <variableId>input</variableId>
      </inputVariable>
      <searchRadius>10000</searchRadius>
      <outputVariable>
        <variableId>output</variableId>
      </outputVariable>
    </verticalProfileClosestDistance>
  </interpolationSpatial>
</transformation>

```

Common issues

None reported.

Related items

[transformationModule.xsd](#)