

Quick Guide to ArcNLET-Py Postprocessing in the Transport Module



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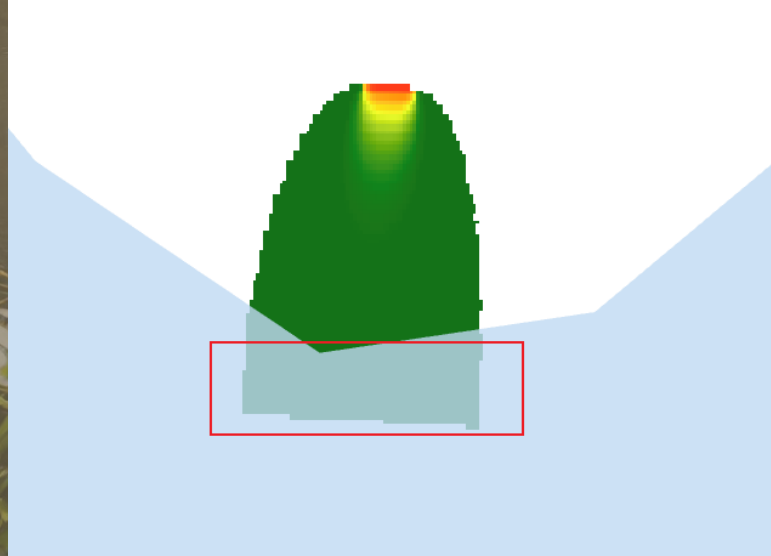
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Postprocessing in the Transport

- This option sets whether to apply a **None**, **Medium** or **Full** processing to accurately calculate the boundaries of plumes entering a water body.



Geoprocessing

4-Transport

Parameters Environments

Types of contaminants
Nitrogen

☐ Consideration of NH₄-N

* Input Source locations (point)

* Input Water bodies (polygon)

* Input Particle Paths (polyline)

Output Plumes of NO₃-N (raster)

✓ Solution Options

Solution type
DomenicoRobbinsSSDecay2D

Plume warping control
point spacing [Cells] 48

Plume warping method
Spline

Threshold Concentration [mg/l] 0.000001

i Postprocessing
Medium

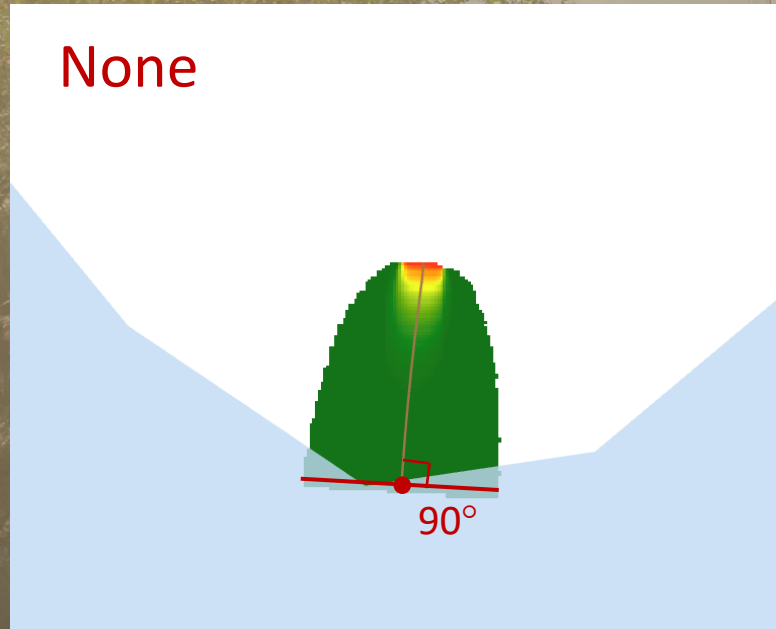
None

Medium

Full

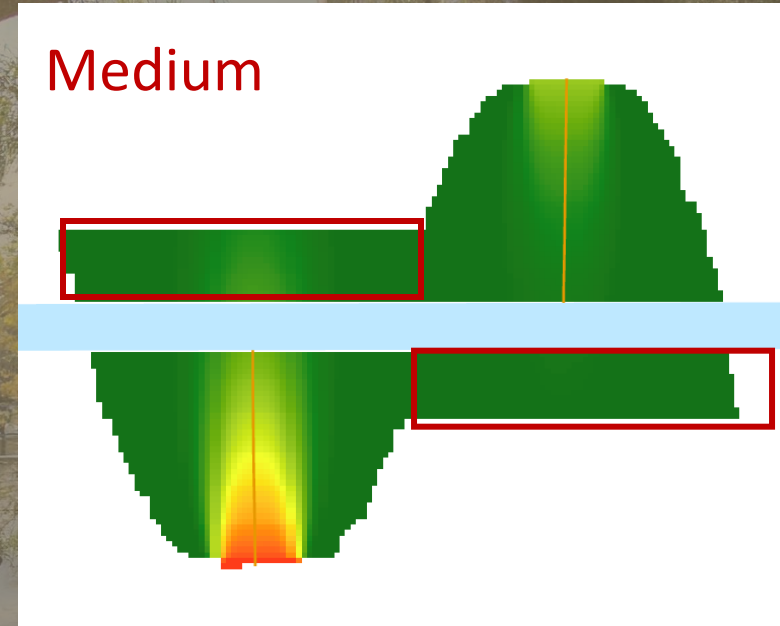
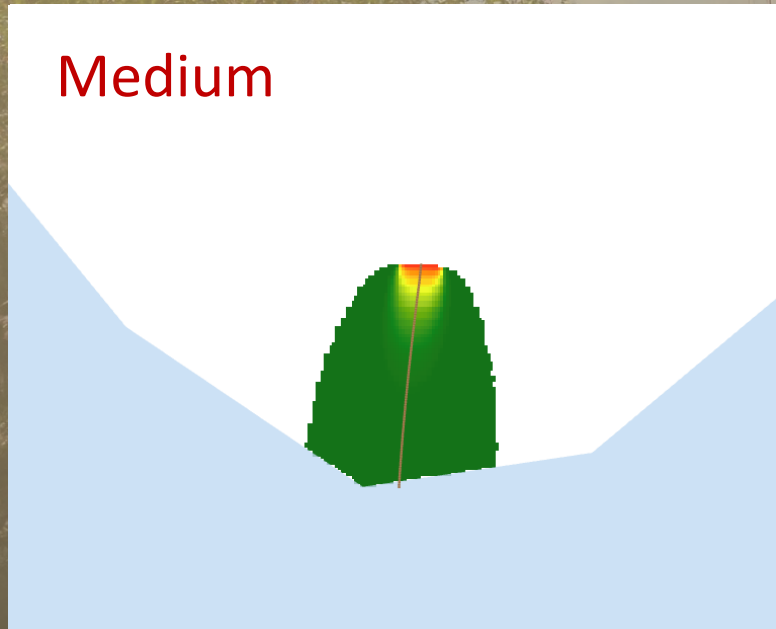
Maximum plumes of
Continuous calculation for 400

Postprocessing in the Transport Module



- At the intersection of the particle path and the surface water body, the plume is truncated along a line perpendicular to the particle path.
- With the "full" option, the results are highly precise, as the plume is strictly truncated based on its exact position relative to the water body. However, this approach is more time consuming.

Postprocessing in the Transport Module



- The "medium" option first calculates all plumes completely, merges them, and then removes the portion that falls within the water body. For simple cases, the option produces results as good as the "full" option.

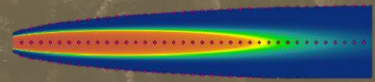
- But, when the spatial relationship between plumes and the water body becomes complex, the "medium" option may fail to provide accurate results.

Postprocessing in the Transport Module

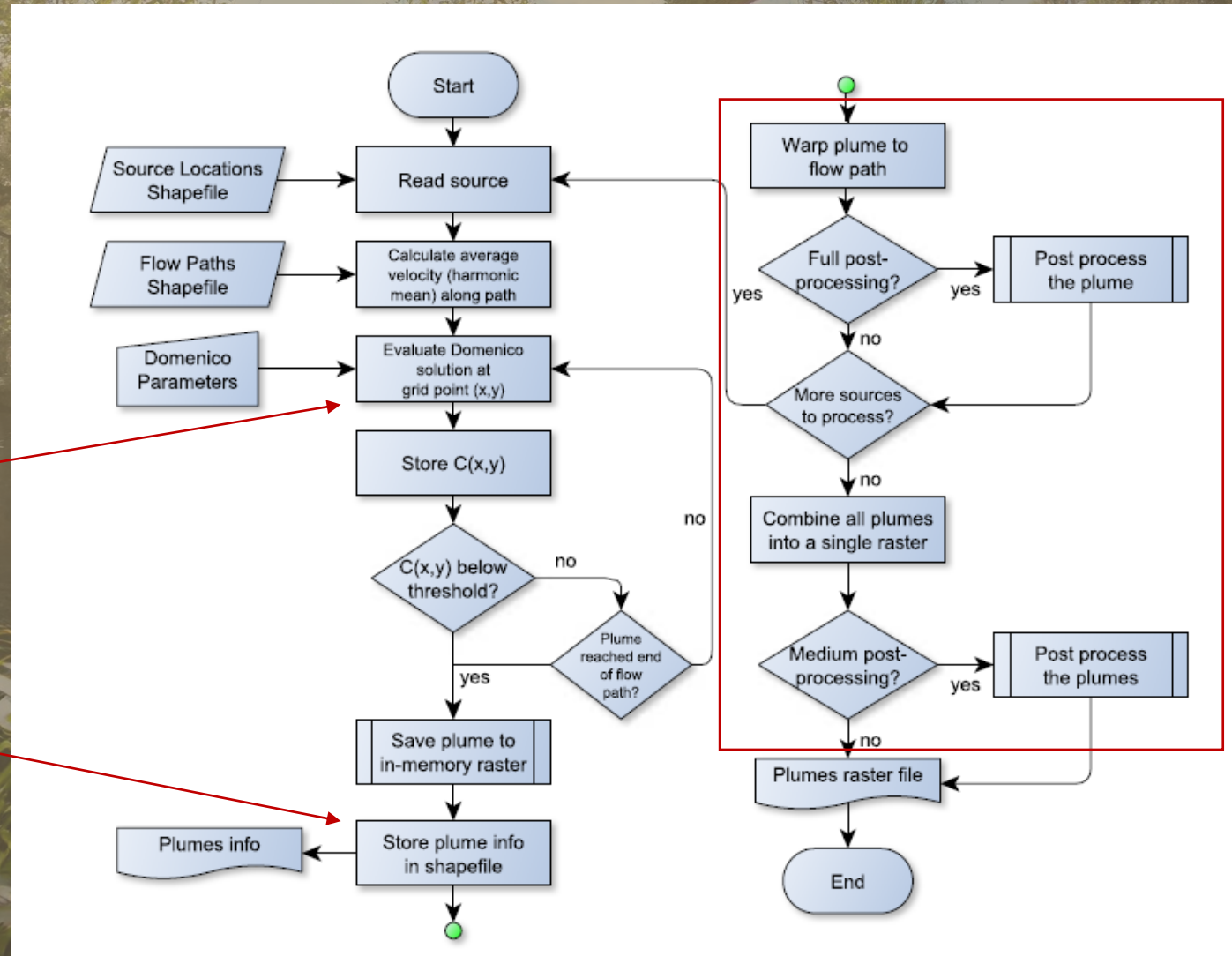
	None	Medium	Full
Effect of this option	Direct truncation, not good.	When the situation is simple, it works well. Otherwise, it does not.	Always perfect.
Computation time	Low	Medium	High
Does it affect load results calculated by Load Estimation Module?	No	No	No

Postprocessing in the Transport Module

Standard plume



Mass balance calculation about the plume



Warp and postprocessing

