Thicken Lattice Graph [Rounded]

nTopology

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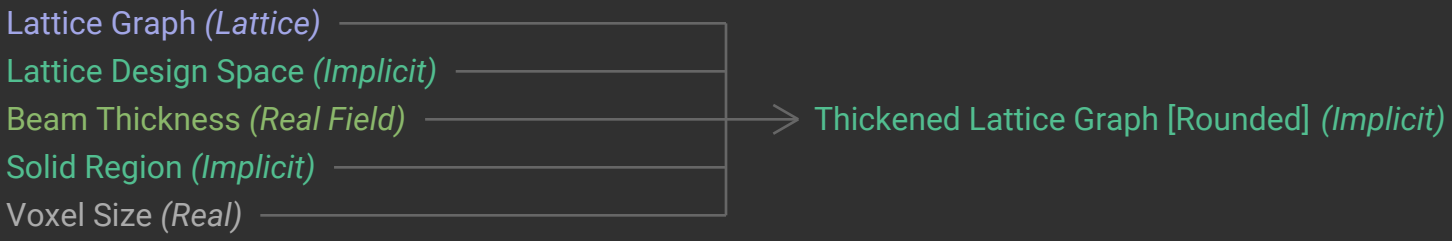

Description

Thickens a lattice graph's beams with a circular beam profile. Each thickened beam runs the full length of the lattice graph beam and creates a hemispherical "endcap" geometry that extends beyond the endpoint of the lattice graph beam by half the beam thickness value (radius) at that location. The lattice graph is trimmed on the exposed sides (sides not interfacing with the solid region) by half the beam thickness distribution value (radius value), allowing for the thickening process to create thickened lattice beams that meet the profile of the original lattice design space. If a non-uniform beam thickness field is provided, the cross-section of each beam can respond non-uniformly and allow for a tapered beam shape. The input beam thickness value for this block should match the input beam thickness value of the upstream lattice graph block.

Input Descriptions

Lattice Graph	*Lattice graph to be thickened.*
Lattice Design Space	*Volume to be used as a trimming selection region.*
Beam Thickness	*Desired beam diameter distribution of the lattice structure.*
Solid Region	*Volume used to generate the reference trimming region.*
Voxel Size	*Voxel Size used to generate the accuracy of the reference trimming region. Lower values allow for higher profile fidelity at the cost of increased computation time.*