

Thicken Lattice Graph [Truncated]

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 the half the beam thickness value (radius) at that location. Each thickened beam is then truncated by the input lattice design space, ensuring that no portion of the thickened lattice structure exists outside of the lattice design space. This truncation typically removes most of the "endcap" geometry at the lattice design space boundary and can also cause disconnected (floating) beam structures and axially-trimmed lattice beams that are thinner than the input beam thickness value. 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	<i>Lattice graph to be thickened.</i>
Lattice Design Space	<i>Volume to be used as a trimming selection region.</i>
Beam Thickness	<i>Desired beam diameter distribution of the lattice structure.</i>