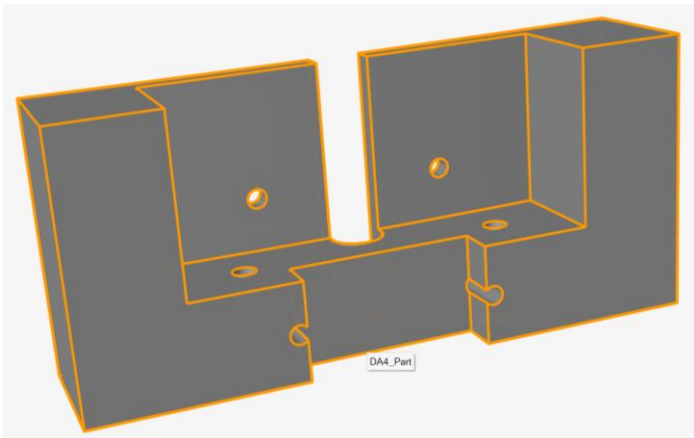


ME-653-Design for Additive Manufacturing

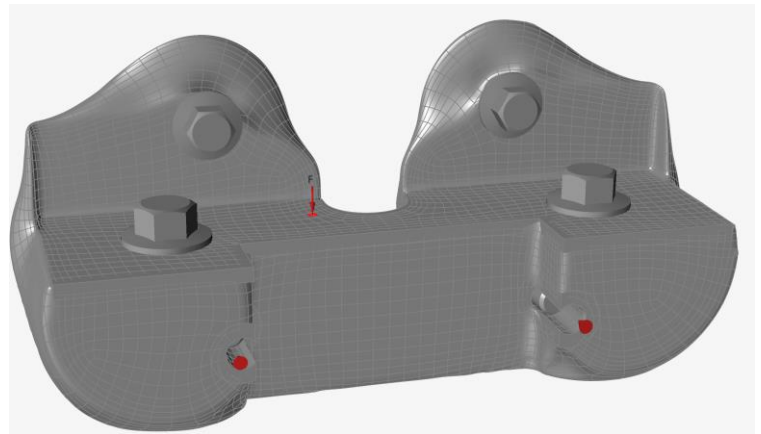
- Kalpak H

Part Description	Original	Topology-Optimized	Lattice- Design
Weight	440.87 grams	165.2 grams	90.4 grams
Maximum Stress	47.91MPa	5.875MPa	57.19MPa
Displacement	1.077×10^{-3}	2.712×10^{-4}	1.69×10^{-2}
Factor of Safety	4.488	3.659	3.75

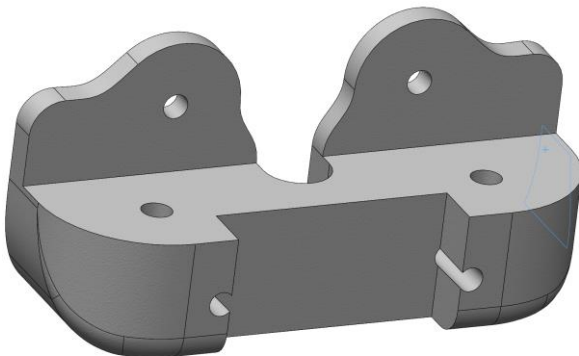
- Eliminating all components that don't perform engineering functions.
- Improving the part's functionality through optimization.
- Decreased the minimum wall thickness.
- Added a lattice design to the entire design area.



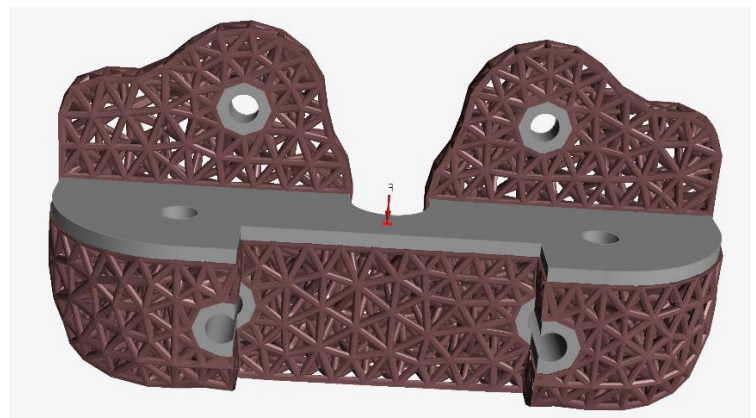
Original



Optimized

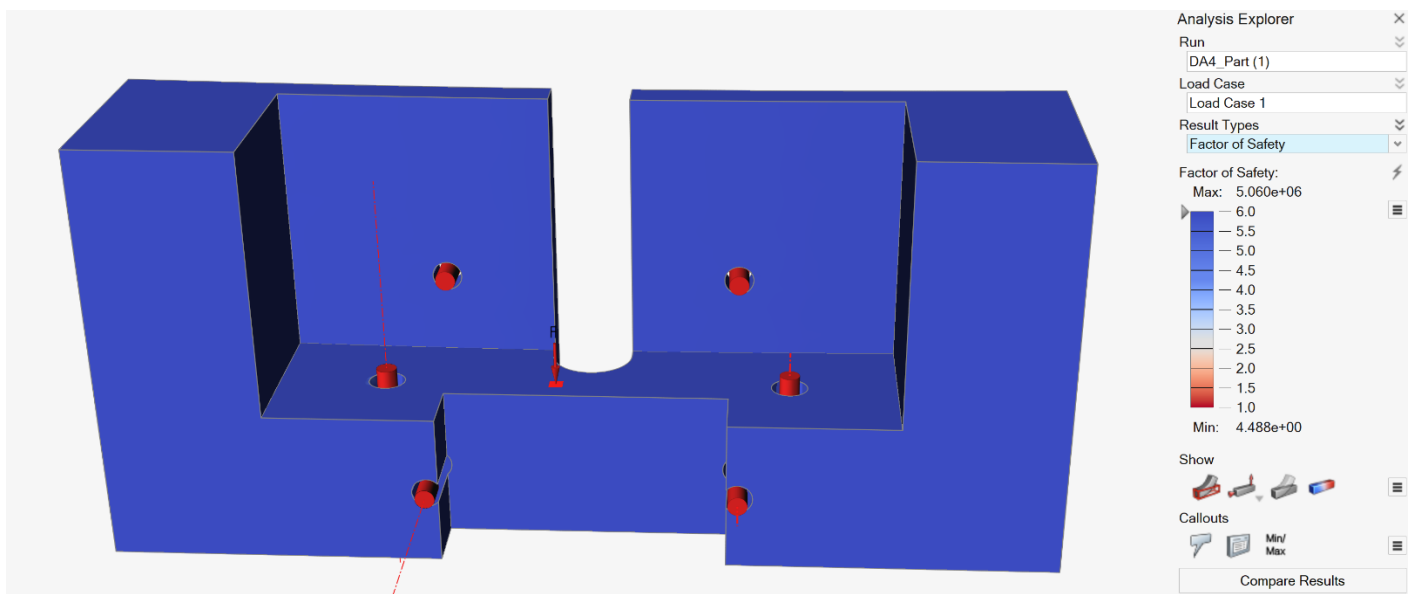
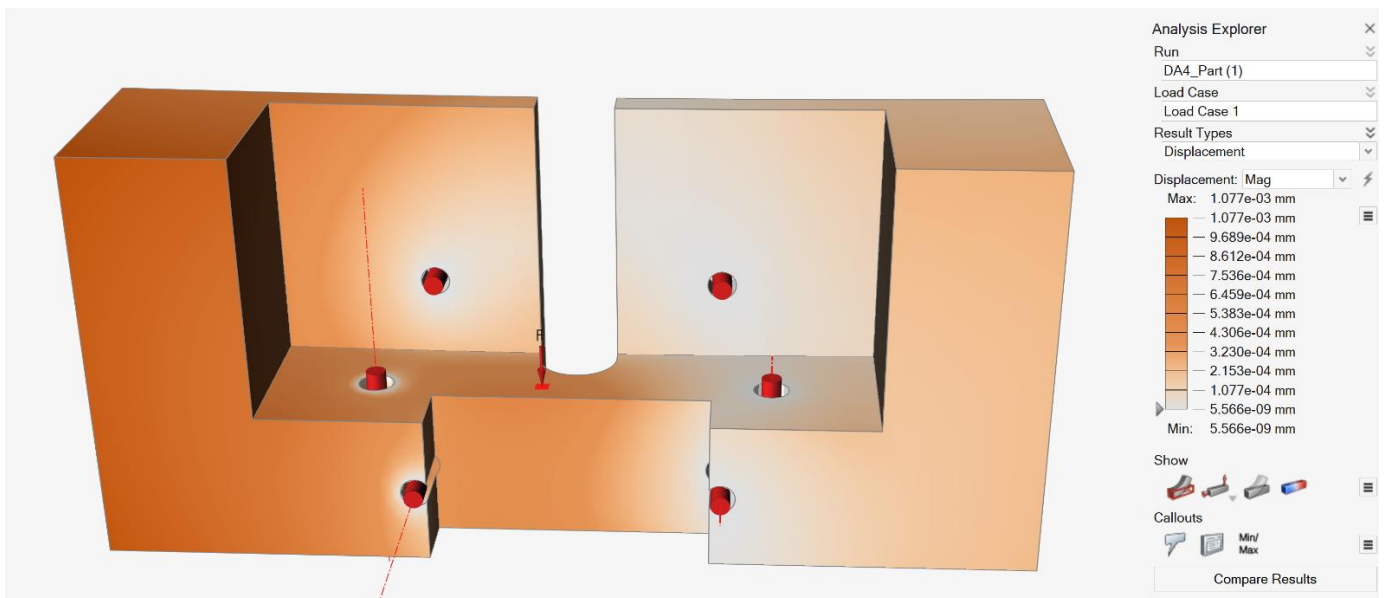
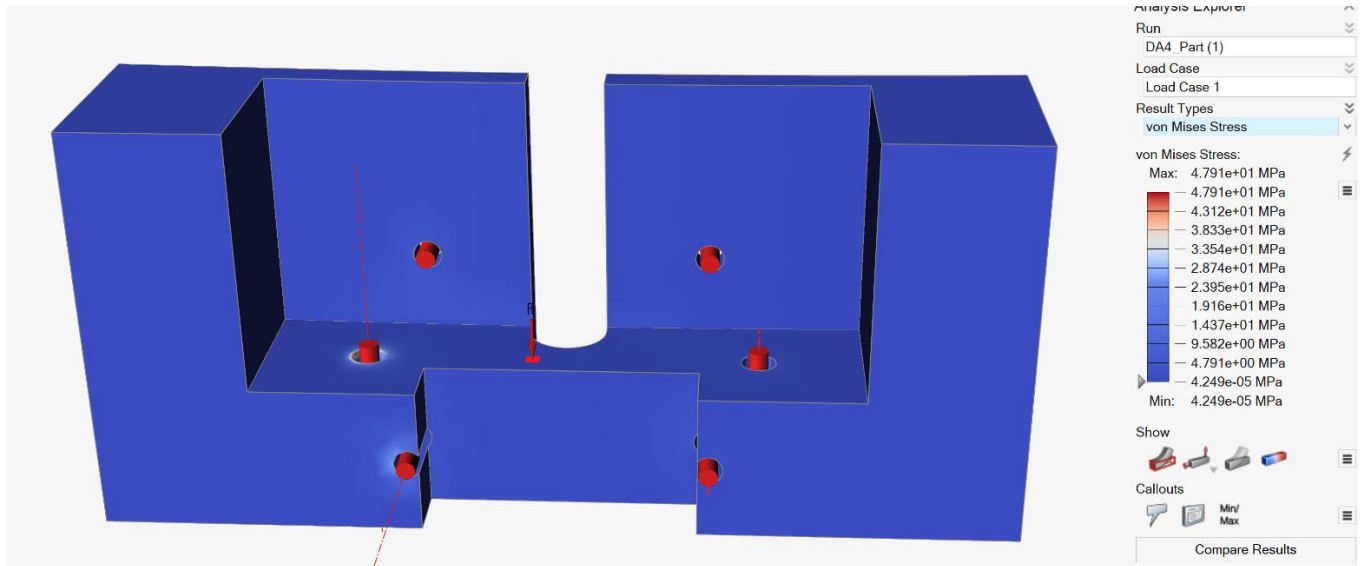


Redesign Envelope

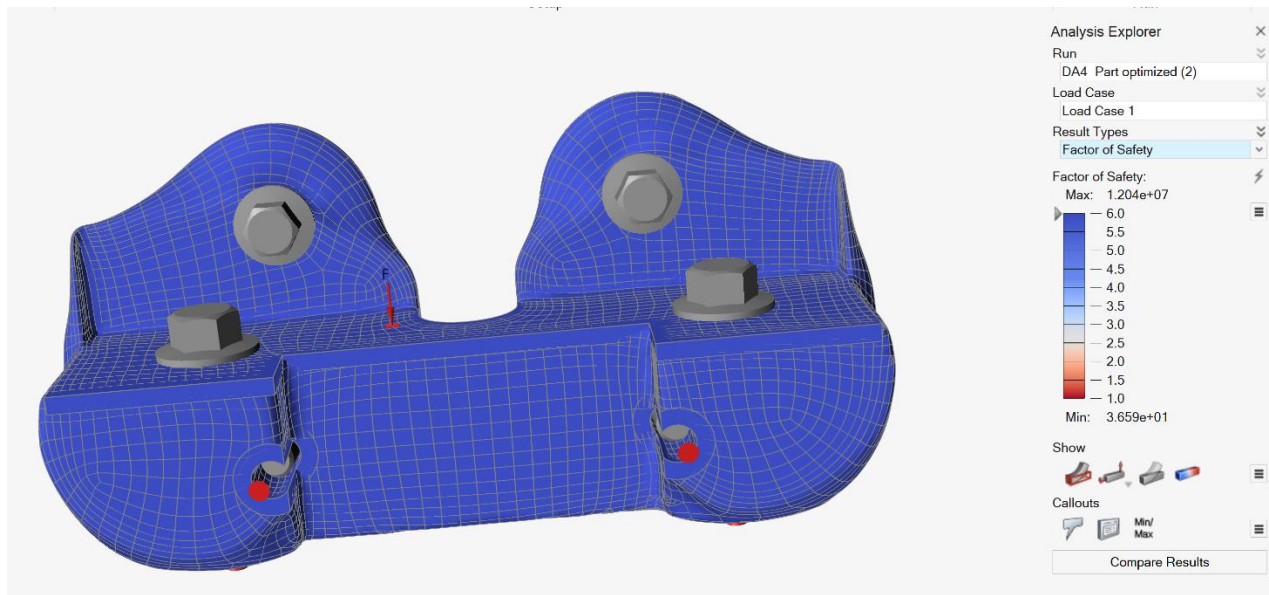
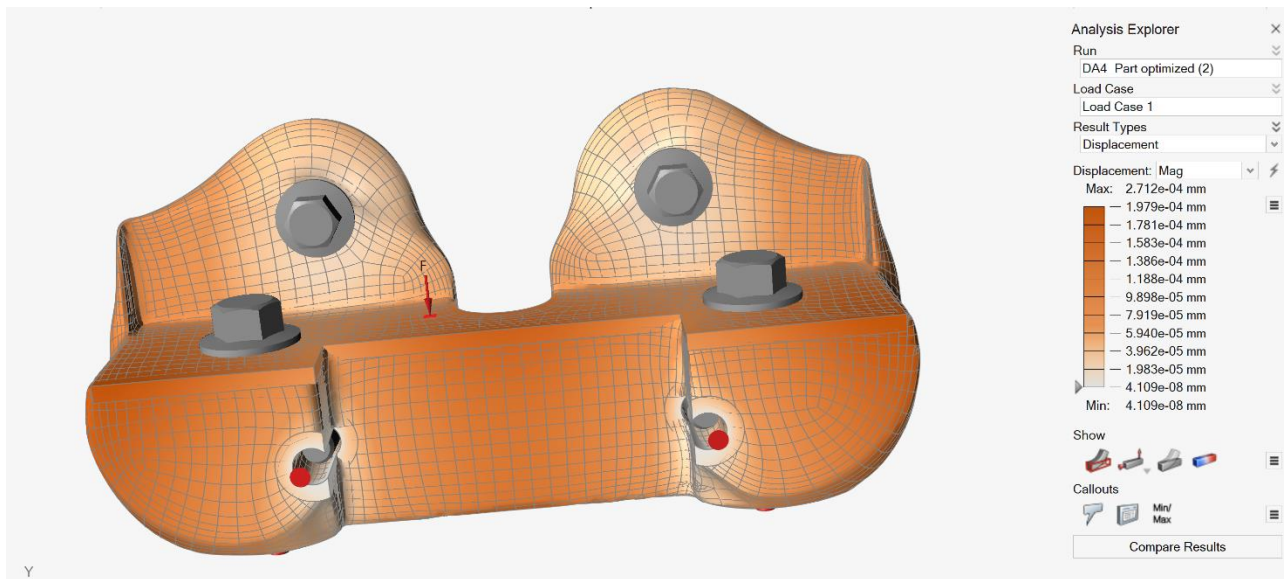
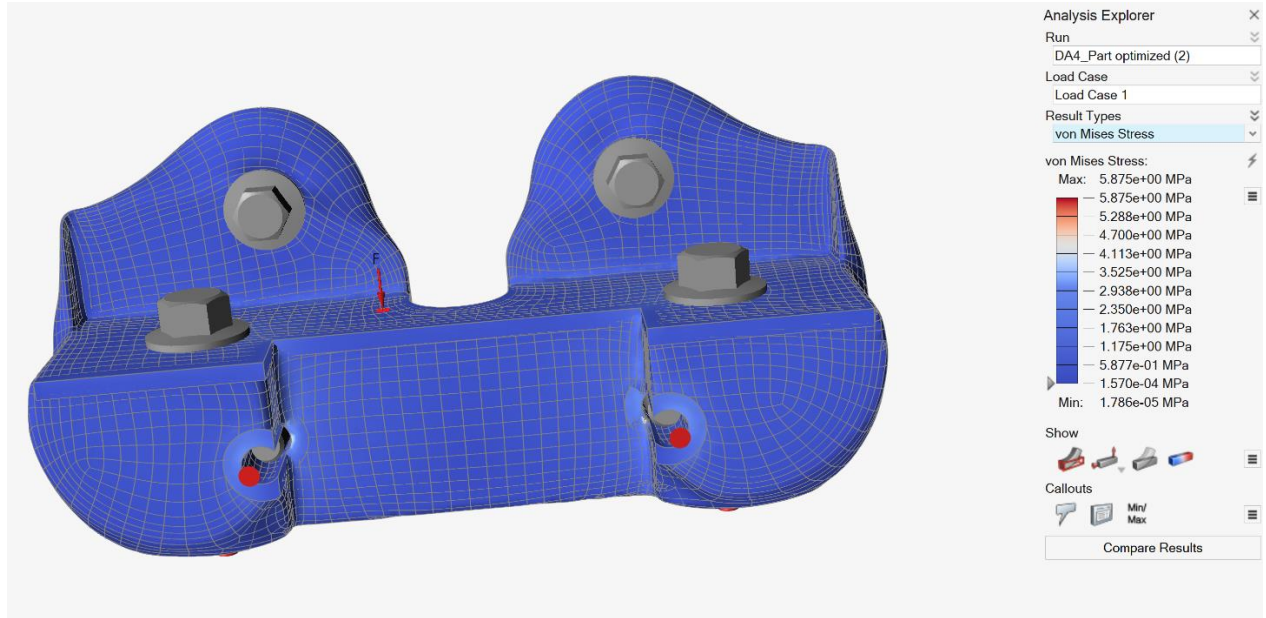


Lattice-Optimized Redesign

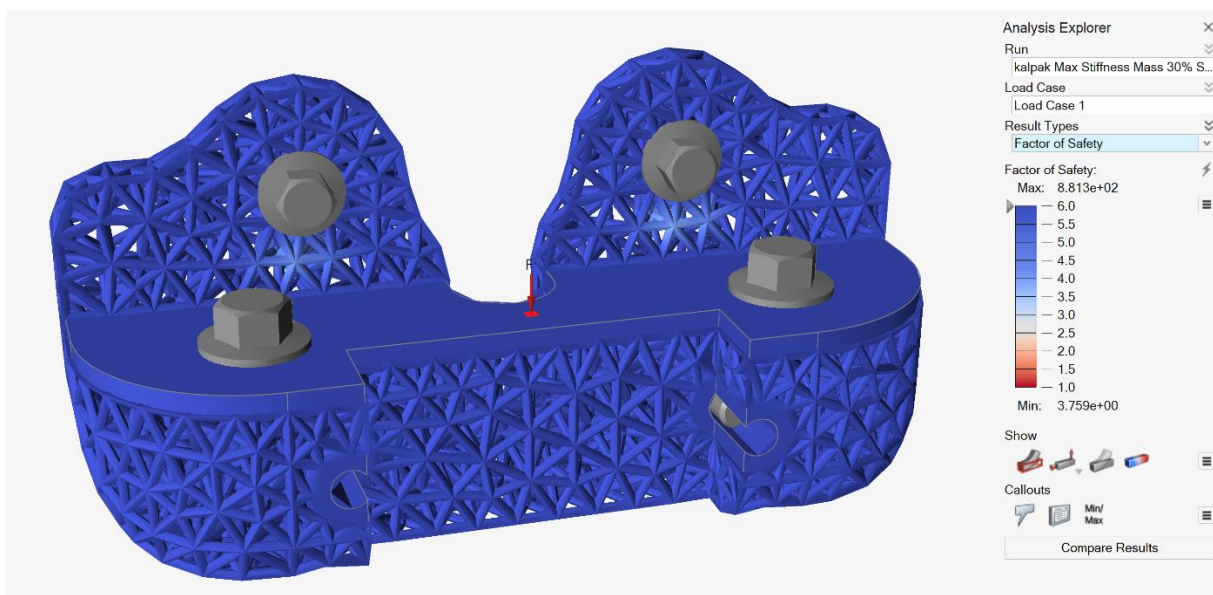
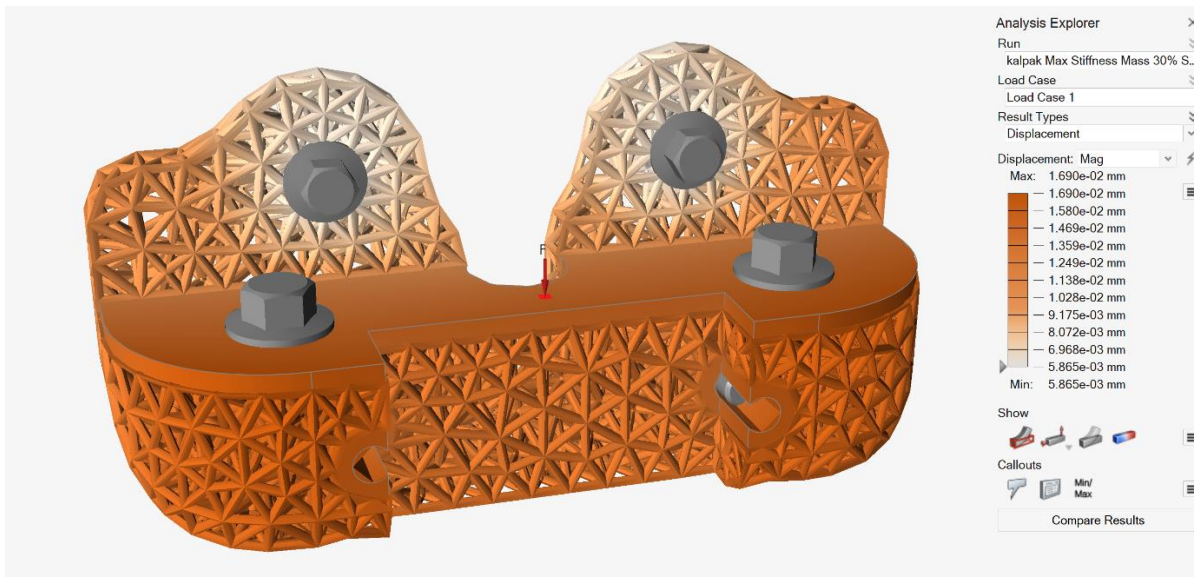
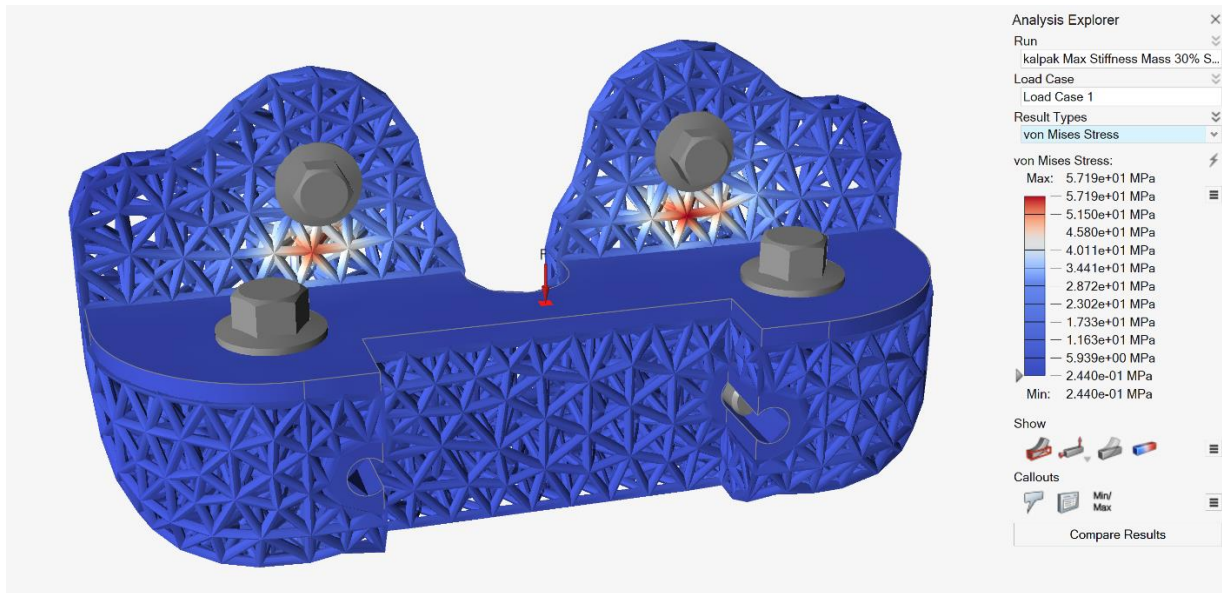
Original Model Bracket Analysis



Topology Optimized Bracket



Lattice-Optimized on Redesigned Bracket



Redesigning on Lattice-Optimized Bracket

