

Simulation of Ex01_Barreto_01Edit

Date: Friday, June 08, 2018
Designer: Harold Barreto
Study name: SimulationXpress Study
Analysis type: Static

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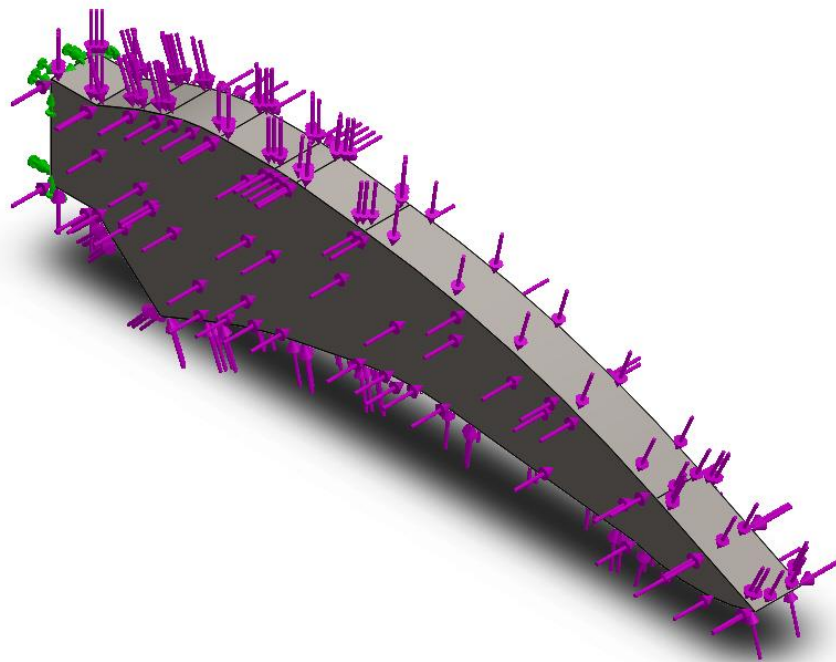
Description

Ex06 Advanced Solid Modeling 2



Assumptions

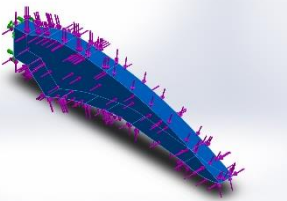
Model Information



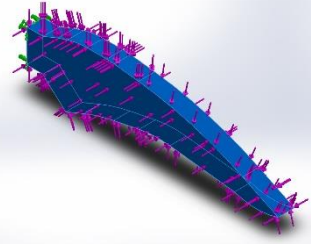
Model name: Ex01_Barreto_01Edit
Current Configuration: Default

Solid Bodies

Document Name and Reference	Treated As	Volumetric Properties	Document Path/Date Modified
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<p>Boss-Extrude1</p> 	<p>Solid Body</p>	<p>Mass:0.548914 kg Volume:6.99253e-005 m³ Density:7850 kg/m³ Weight:5.37935 N</p>	<p>C:\Users\Labs.METID\Desktop\Ex01_Barreto_01Edit.SLDPRT Jun 06 19:32:18 2018</p>
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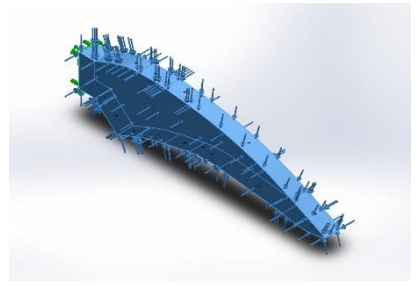
Material Properties

Model Reference	Properties	Components
	<p>Name: AISI 4340 Steel, annealed Model type: Linear Elastic Isotropic Default failure criterion: Max von Mises Stress Yield strength: 4.7e+008 N/m² Tensile strength: 7.45e+008 N/m²</p>	<p>SolidBody 1(Boss-Extrude1)(Ex01_Barreto_01Edit)</p>



Loads and Fixtures

Fixture name	Fixture Image	Fixture Details
Fixed-1		Entities: 1 face(s) Type: Fixed Geometry

Load name	Load Image	Load Details
Force-1		Entities: 20 face(s) Type: Apply normal force Value: 1 N

Mesh information

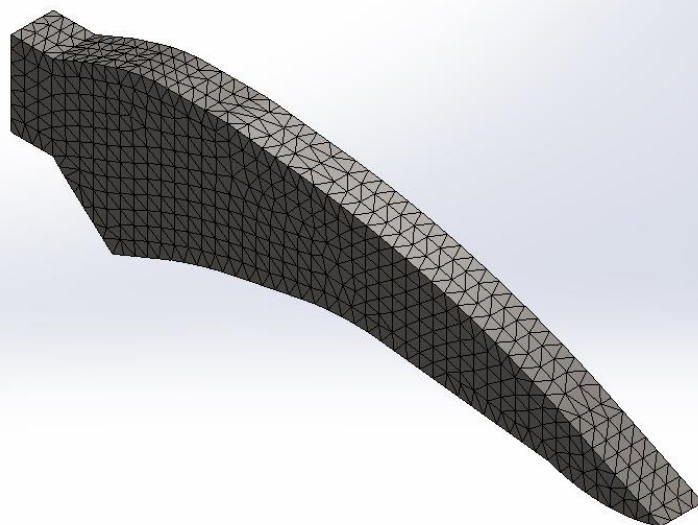
Mesh type	Solid Mesh
Mesher Used:	Standard mesh
Automatic Transition:	Off
Include Mesh Auto Loops:	Off
Jacobian points	4 Points
Element Size	0.162249 in
Tolerance	0.00811247 in
Mesh Quality Plot	High

Mesh information - Details

Total Nodes	11514
Total Elements	7037
Maximum Aspect Ratio	3.7746
% of elements with Aspect Ratio < 3	100
% of elements with Aspect Ratio > 10	0
% of distorted elements(Jacobian)	0
Time to complete mesh(hh:mm:ss):	00:00:02
Computer name:	V511A-16



Model name: Ex01_Barreto_01Edit
Study name: SimulationXpress Study(-Default-)
Mesh type: Solid Mesh

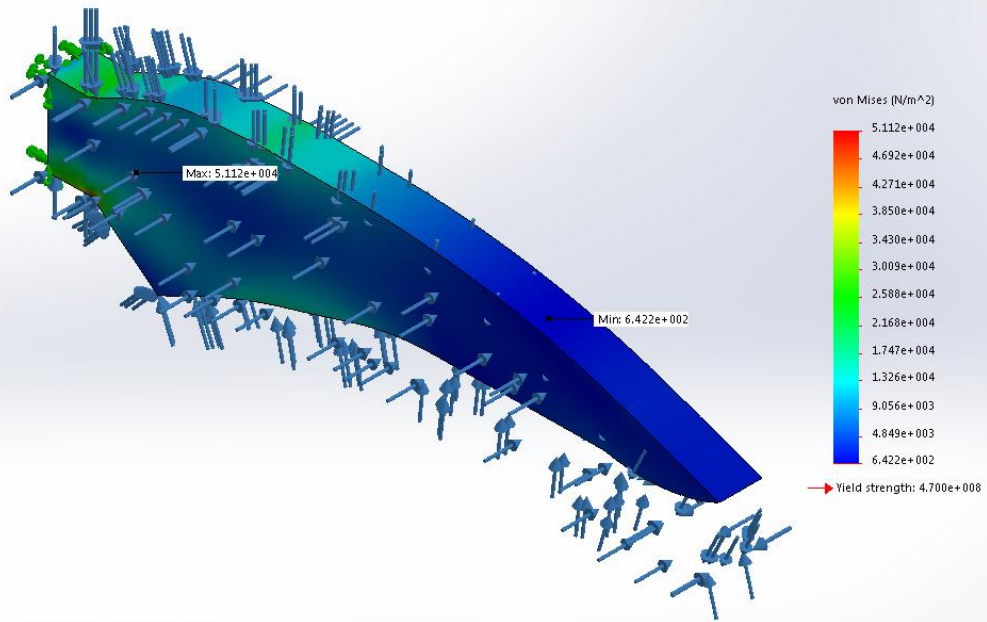


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Study Results

Name	Type	Min	Max
Stress	VON: von Mises Stress	6.422e+002N/m ² Node: 293	5.112e+004N/m ² Node: 1

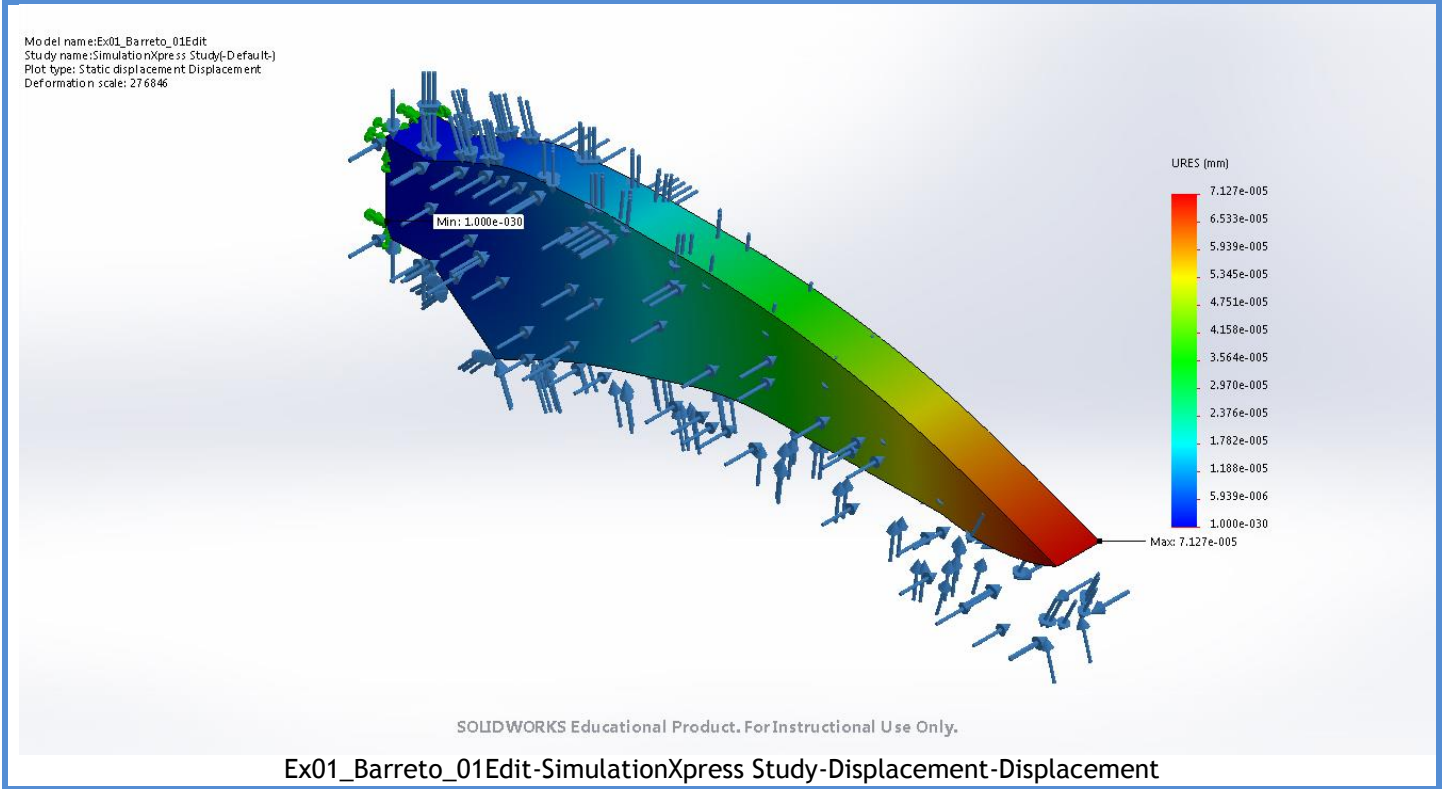
Model name: Ex01_Barreto_01Edit
Study name: SimulationXpress Study(-Default-)
Plot type: Static nodal stress Stress
Deformation scale: 276846



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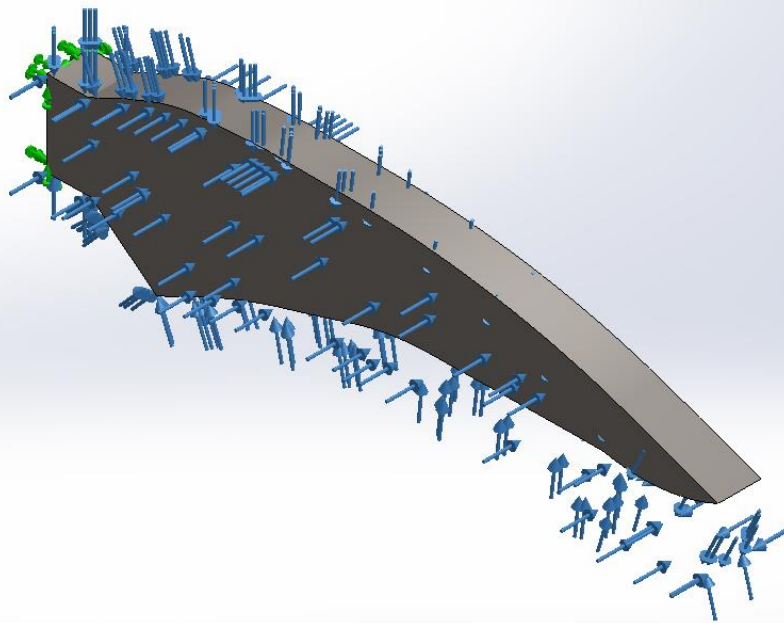
Ex01_Barreto_01Edit-SimulationXpress Study-Stress-Stress

Name	Type	Min	Max
Displacement	URES: Resultant Displacement	0.000e+000mm Node: 416	7.127e-005mm Node: 180



Name	Type
Deformation	Deformed shape

Model name: Ex01_Barreto_01Edit
Study name: SimulationXpress Study (Default)
Plot type: Deformed shape, Deformation
Deformation scale: 276846

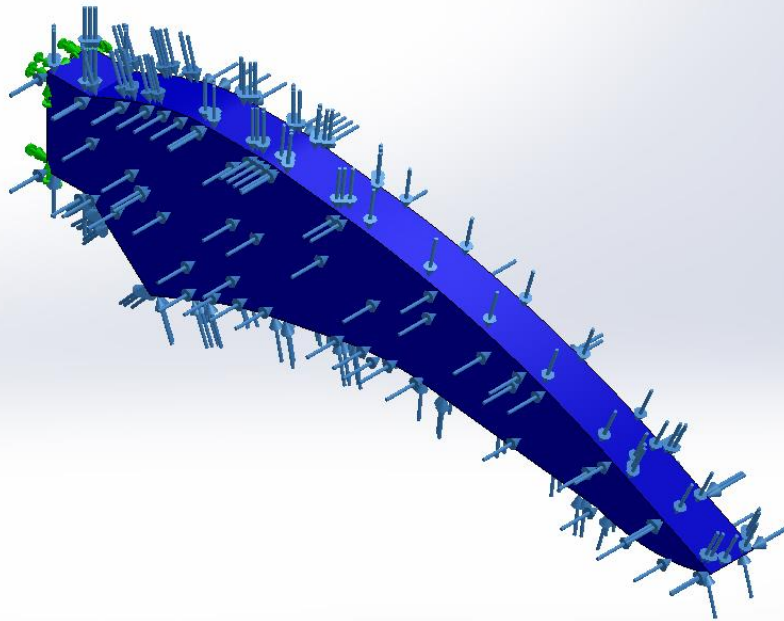


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Ex01_Barreto_01Edit-SimulationXpress Study-Displacement-Deformation

Name	Type	Min	Max
Factor of Safety	Max von Mises Stress	9.193e+003 Node: 1	7.319e+005 Node: 293

Model name: Ex01_Barreto_01Edit
Study name: SimulationXpress Study-(Default)
Plot type: Factor of Safety Factor of Safety
Criterion: Max von Mises Stress
Red < FOS = 1 < Blue



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Ex01_Barreto_01Edit-SimulationXpress Study-Factor of Safety-Factor of Safety

Conclusion