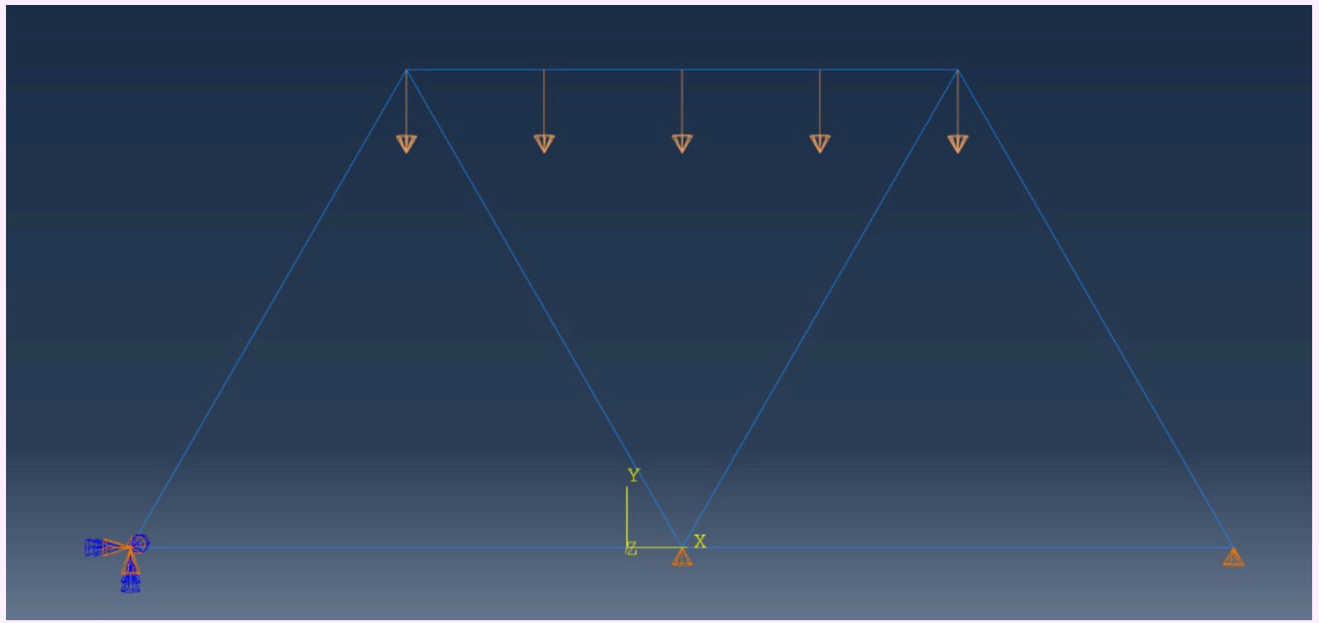
2D Truss

case 1: Distributed load (q=100N/m)

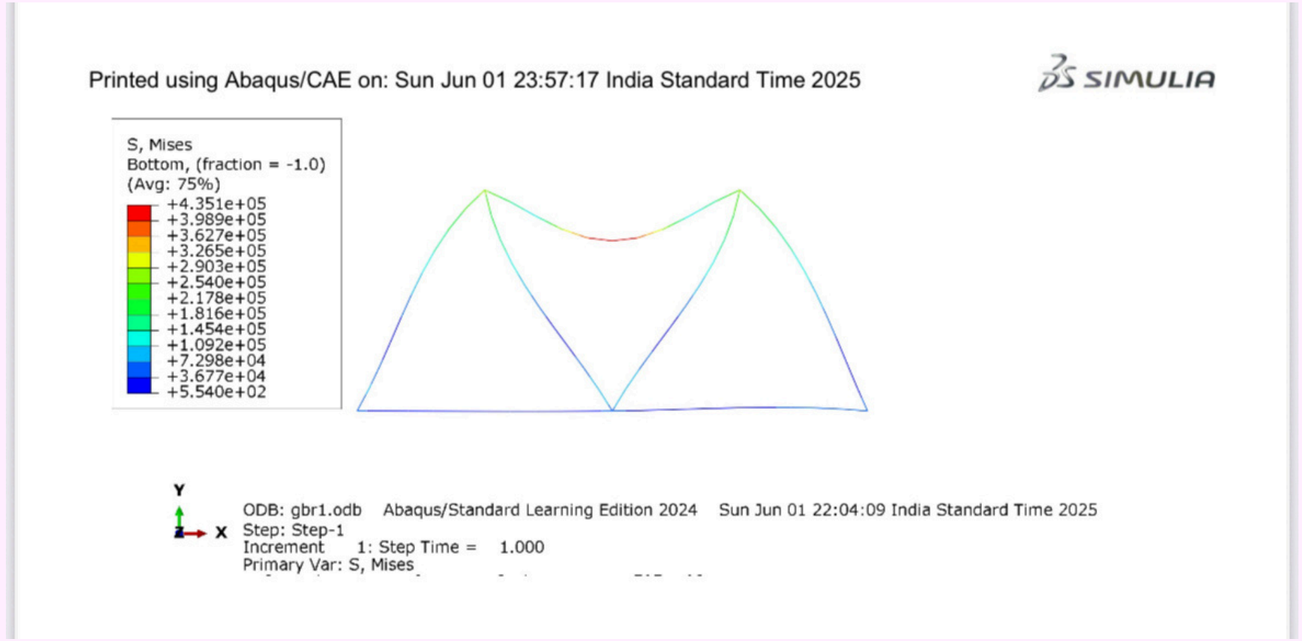


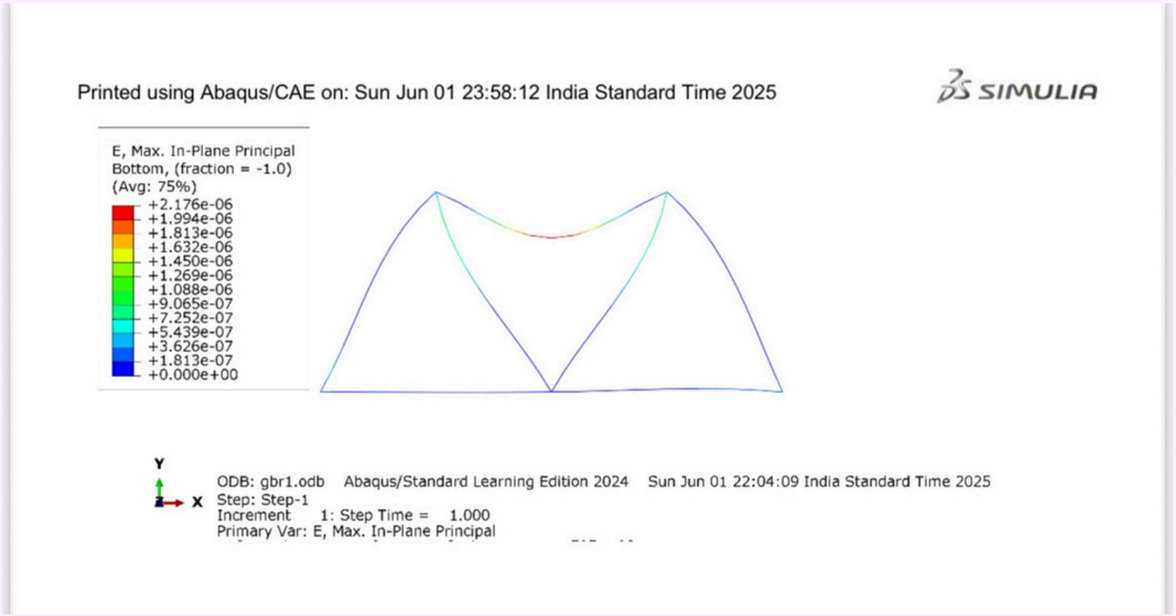
length of each beam = 50m

Youngs modulus of material used = 200 GPa

poisson’s ratio = 0.3

2D Truss


Printed using Abaqus/CAE on: Sun Jun 01 23:57:17 India Standard Time 2025
SIMULIA
S, Mises
Bottom, (fraction = -1.0)
(Avg: 75%)
+4.351e+05
+3.989e+05
+3.627e+05
+3.265e+05
+2.903e+05
+2.540e+05
+2.178e+05
+1.816e+05
+1.454e+05
+1.092e+05
+7.298e+04
+3.677e+04
+5.540e+02
Y
X
ODB: gbr1.odb Abaqus/Standard Learning Edition 2024 Sun Jun 01 22:04:09 India Standard Time 2025
Step: Step-1
Increment 1: Step Time = 1.000
Primary Var: S, Mises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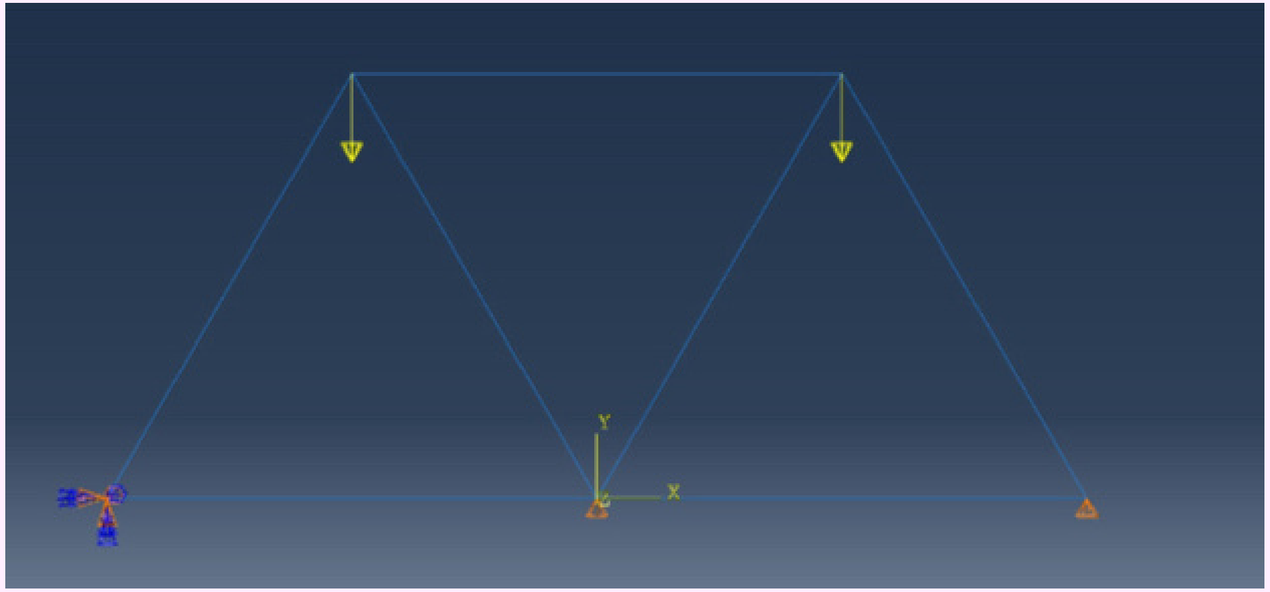
SIMULIA
E, Max. In-Plane Principal
Bottom, (fraction = -1.0)
(Avg: 75%)
+2.176e-06
+1.994e-06
+1.813e-06
+1.632e-06
+1.450e-06
+1.269e-06
+1.088e-06
+9.065e-07
+7.252e-07
+5.439e-07
+3.626e-07
+1.813e-07
+0.000e+00
Y
X
ODB: gbr1.odb Abaqus/Standard Learning Edition 2024 Sun Jun 01 22:04:09 India Standard Time 2025
Step: Step-1
Increment 1: Step Time = 1.000
Primary Var: E, Max. In-Plane Principal

2D Truss

Case 2: concentrated point load (2p = q = 100N/m)

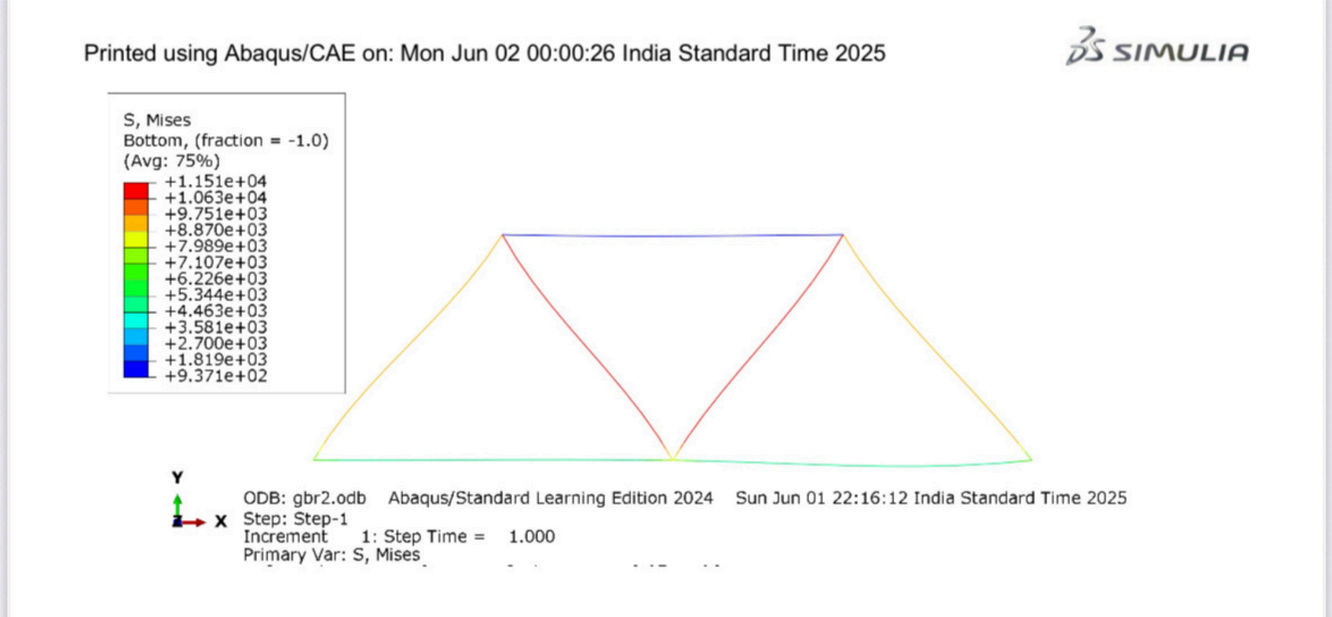


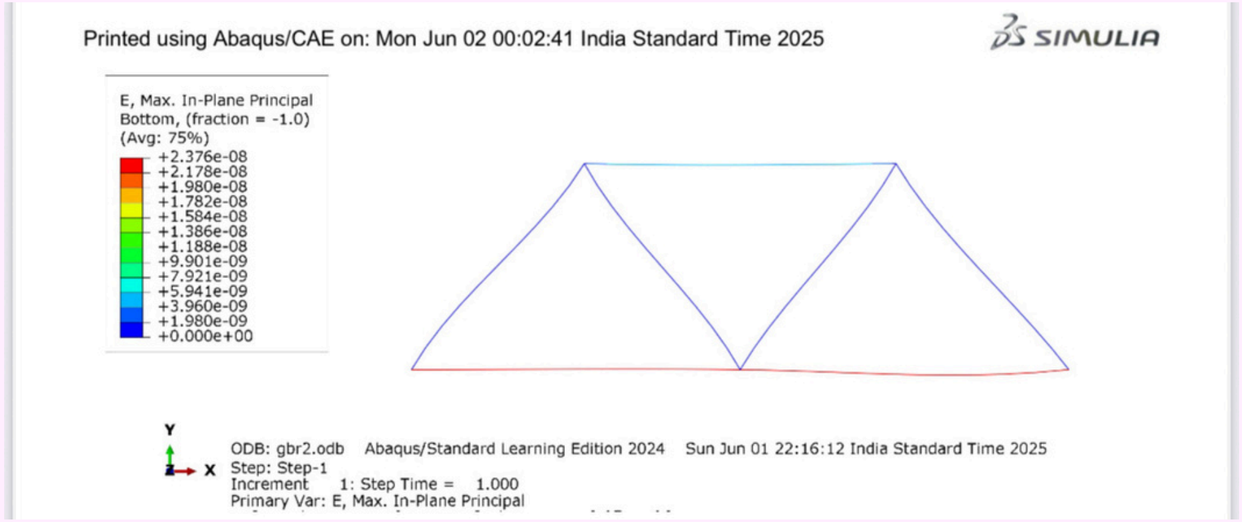
length of each beam = 50m

Youngs modulus of material used = 200 GPa

poisson’s ratio = 0.3

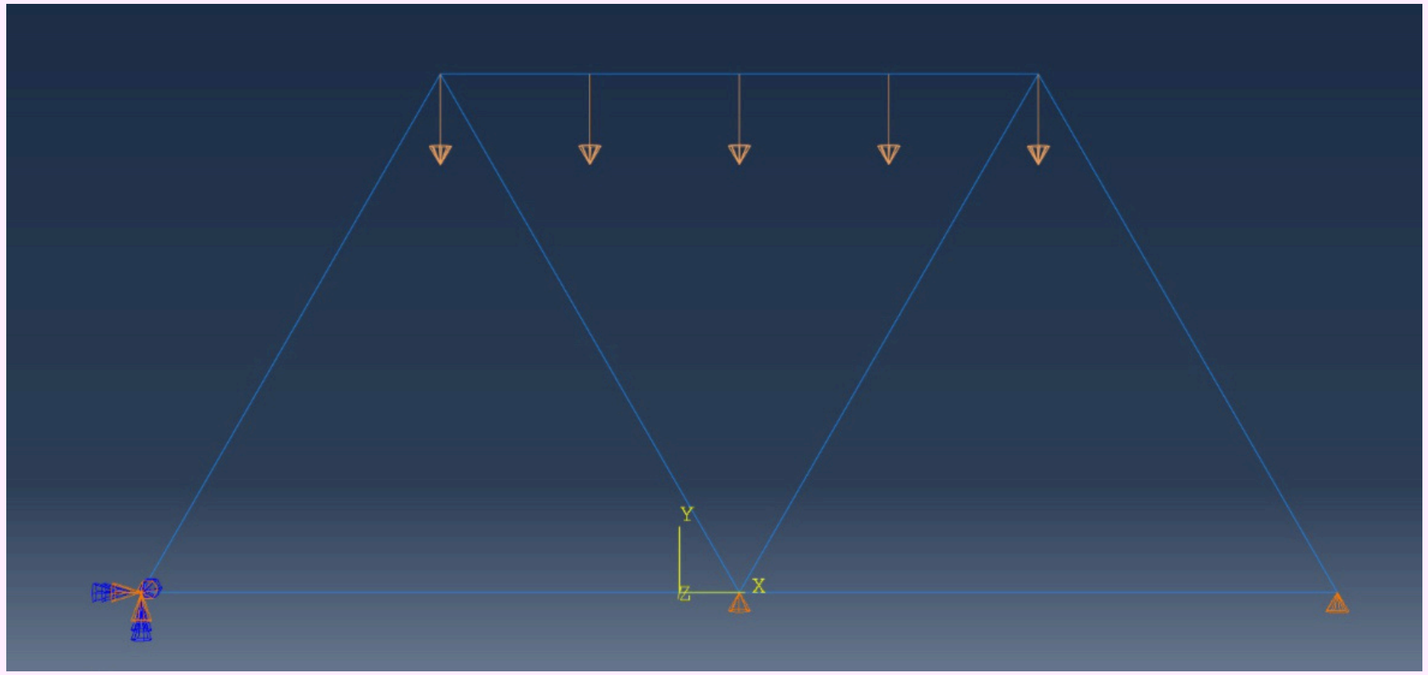
2D Truss


Printed using Abaqus/CAE on: Mon Jun 02 00:00:26 India Standard Time 2025
SIMULIA
S, Mises
Bottom, (fraction = -1.0)
(Avg: 75%)
+1.151e+04
+1.063e+04
+9.751e+03
+8.870e+03
+7.989e+03
+7.107e+03
+6.226e+03
+5.344e+03
+4.463e+03
+3.581e+03
+2.700e+03
+1.819e+03
+9.371e+02
Y
X
ODB: gbr2.odb Abaqus/Standard Learning Edition 2024 Sun Jun 01 22:16:12 India Standard Time 2025
Step: Step-1
Increment 1: Step Time = 1.000
Primary Var: S, Mises


Printed using Abaqus/CAE on: Mon Jun 02 00:02:41 India Standard Time 2025
SIMULIA
E, Max. In-Plane Principal
Bottom, (fraction = -1.0)
(Avg: 75%)
+2.376e-08
+2.178e-08
+1.980e-08
+1.782e-08
+1.584e-08
+1.386e-08
+1.188e-08
+9.901e-09
+7.921e-09
+5.941e-09
+3.960e-09
+1.980e-09
+0.000e+00
Y
X
ODB: gbr2.odb Abaqus/Standard Learning Edition 2024 Sun Jun 01 22:16:12 India Standard Time 2025
Step: Step-1
Increment 1: Step Time = 1.000
Primary Var: E, Max. In-Plane Principal

2D Truss

case 3: Uniform velocity load (v)



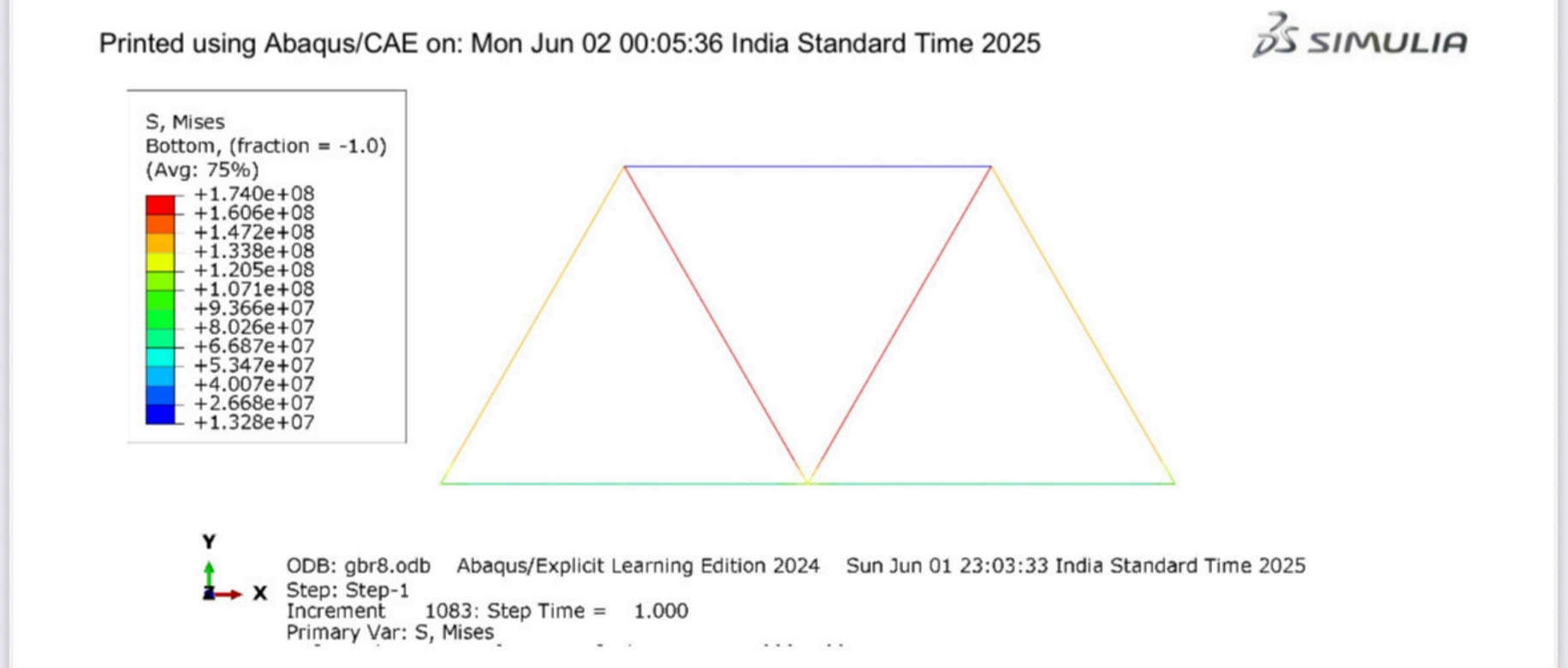
length of each beam = 50m

Youngs modulus of material used = 200 GPa

poisson’s ratio = 0.3

2D Truss

For v = 0.5mm/s:



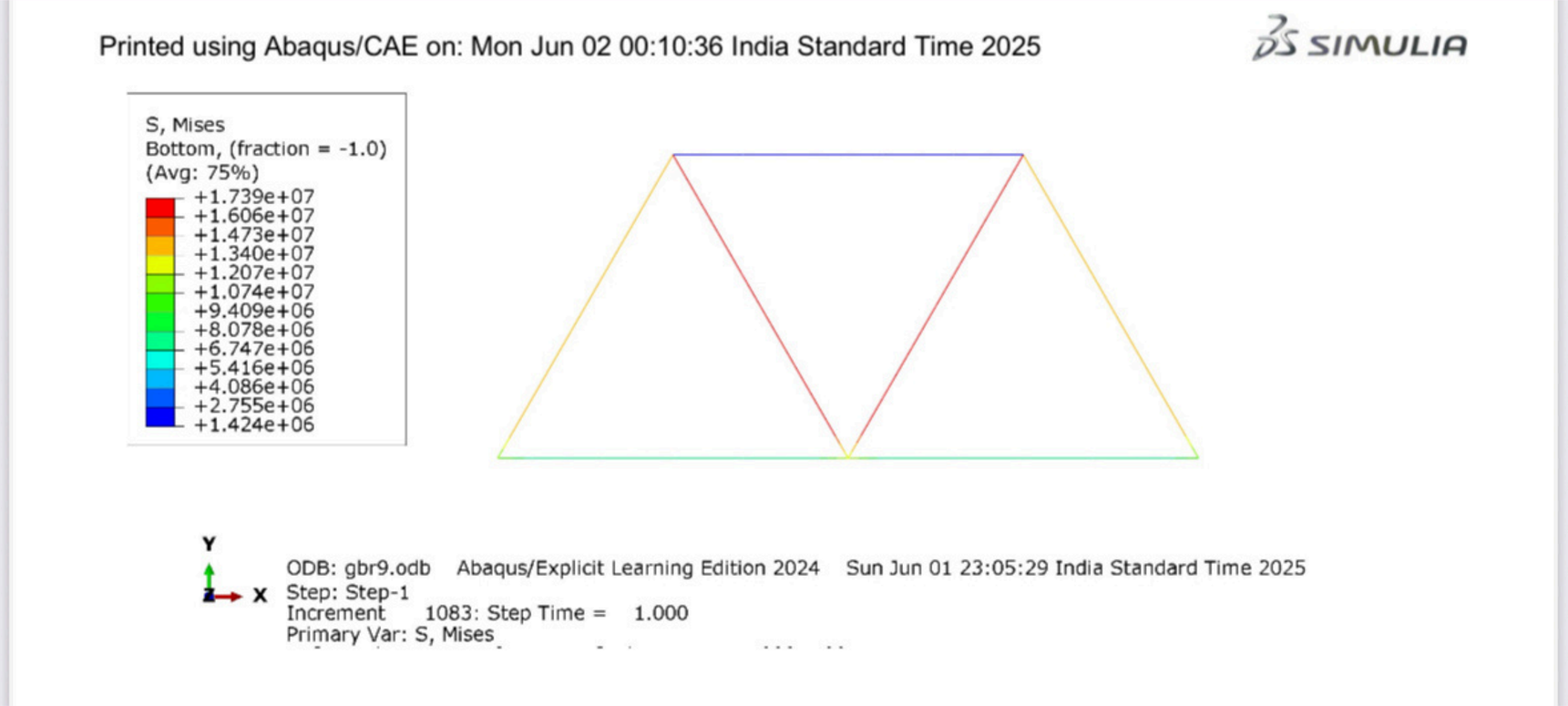
2D Truss


Printed using Abaqus/CAE on: Mon Jun 02 00:09:20 India Standard Time 2025
SIMULIA
LE, Max. In-Plane Principal
Bottom, (fraction = -1.0)
(Avg: 75%)
+3.598e-04
+3.298e-04
+2.998e-04
+2.698e-04
+2.399e-04
+2.099e-04
+1.799e-04
+1.499e-04
+1.199e-04
+8.995e-05
+5.997e-05
+2.998e-05
+0.000e+00
Y
X
ODB: gbr8.odb Abaqus/Explicit Learning Edition 2024 Sun Jun 01 23:03:33 India Standard Time 2025
Step: Step-1
Increment 1083: Step Time = 1.000
Primary Var: LE, Max. In-Plane Principal

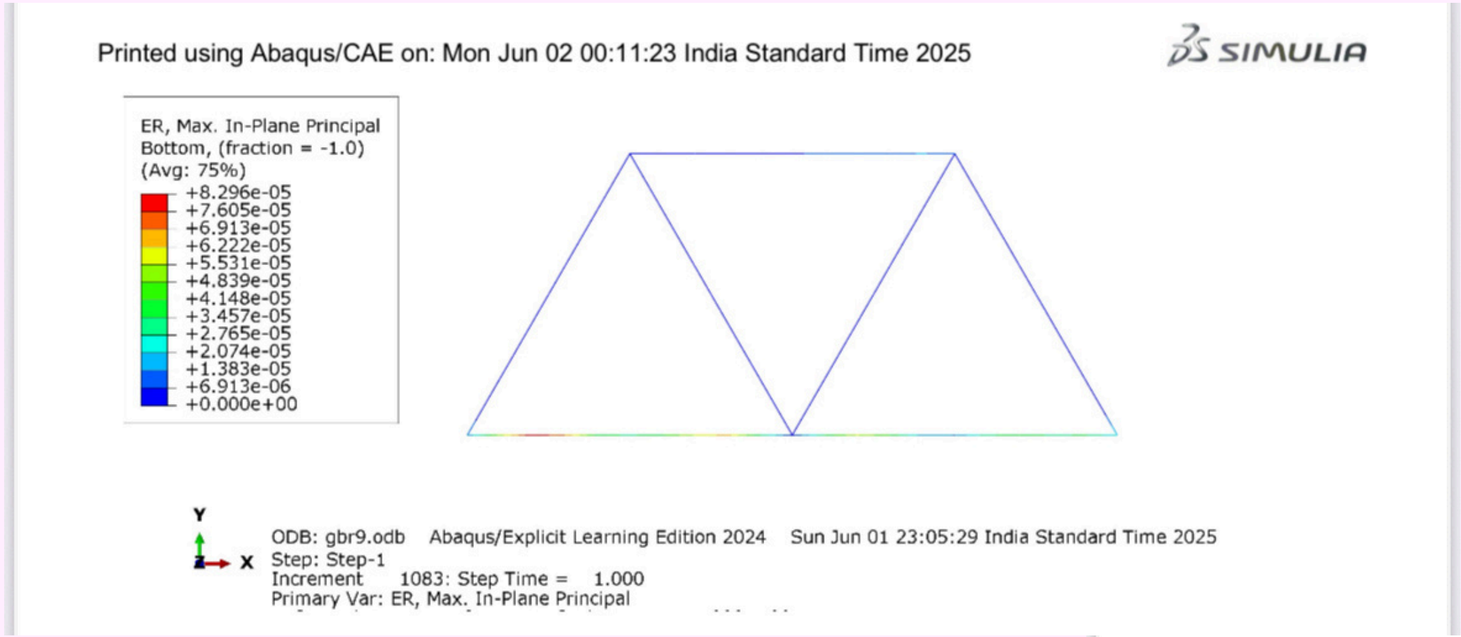

Printed using Abaqus/CAE on: Mon Jun 02 00:09:40 India Standard Time 2025
SIMULIA
ER, Max. In-Plane Principal
Bottom, (fraction = -1.0)
(Avg: 75%)
+8.650e-04
+7.929e-04
+7.209e-04
+6.488e-04
+5.767e-04
+5.046e-04
+4.325e-04
+3.604e-04
+2.883e-04
+2.163e-04
+1.442e-04
+7.209e-05
+0.000e+00
Y
X
ODB: gbr8.odb Abaqus/Explicit Learning Edition 2024 Sun Jun 01 23:03:33 India Standard Time 2025
Step: Step-1
Increment 1083: Step Time = 1.000
Primary Var: ER, Max. In-Plane Principal

2D Truss

For v = 5 mm/s:



2D Truss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SIMULIA
ER, Max. In-Plane Principal
Bottom, (fraction = -1.0)
(Avg: 75%)
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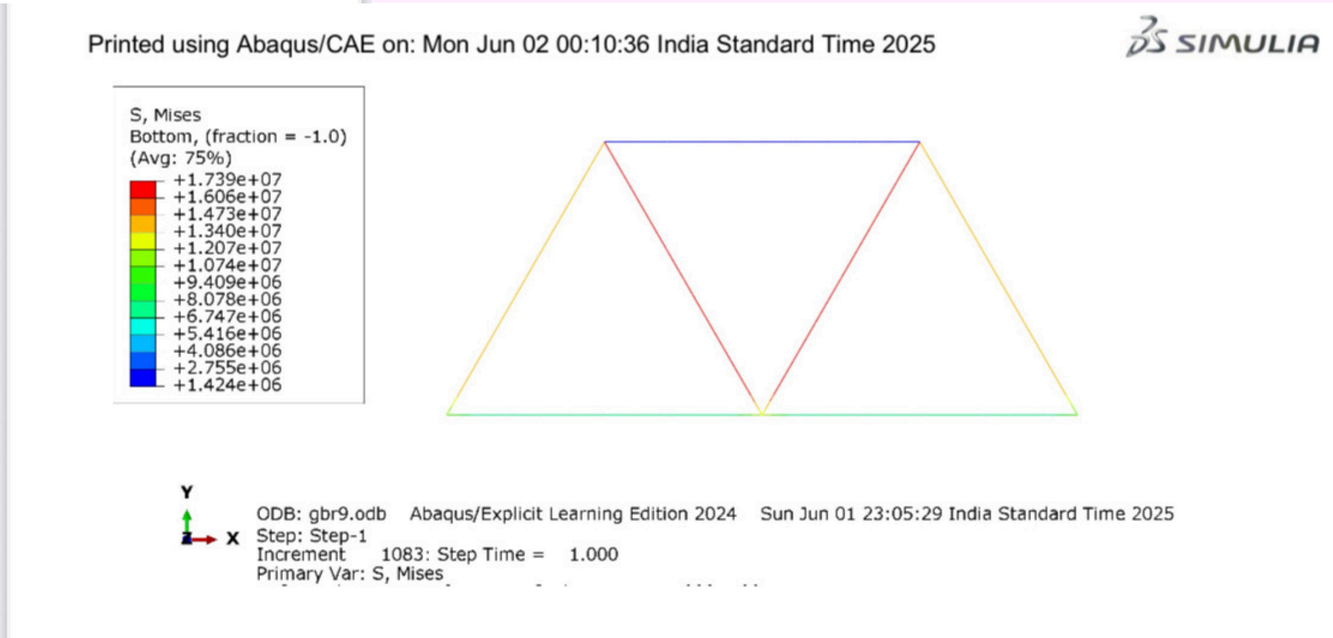
+7.605e-05
+6.913e-05
+6.222e-05
+5.531e-05
+4.839e-05
+4.148e-05
+3.457e-05
+2.765e-05
+2.074e-05
+1.383e-05
+6.913e-06
+0.000e+00
Y
X
ODB: gbr9.odb Abaqus/Explicit Learning Edition 2024 Sun Jun 01 23:05:29 India Standard Time 2025
Step: Step-1
Increment 1083: Step Time = 1.000
Primary Var: ER, Max. In-Plane Principal


Printed using Abaqus/CAE on: Mon Jun 02 00:10:36 India Standard Time 2025
SIMULIA
S, Mises
Bottom, (fraction = -1.0)
(Avg: 75%)
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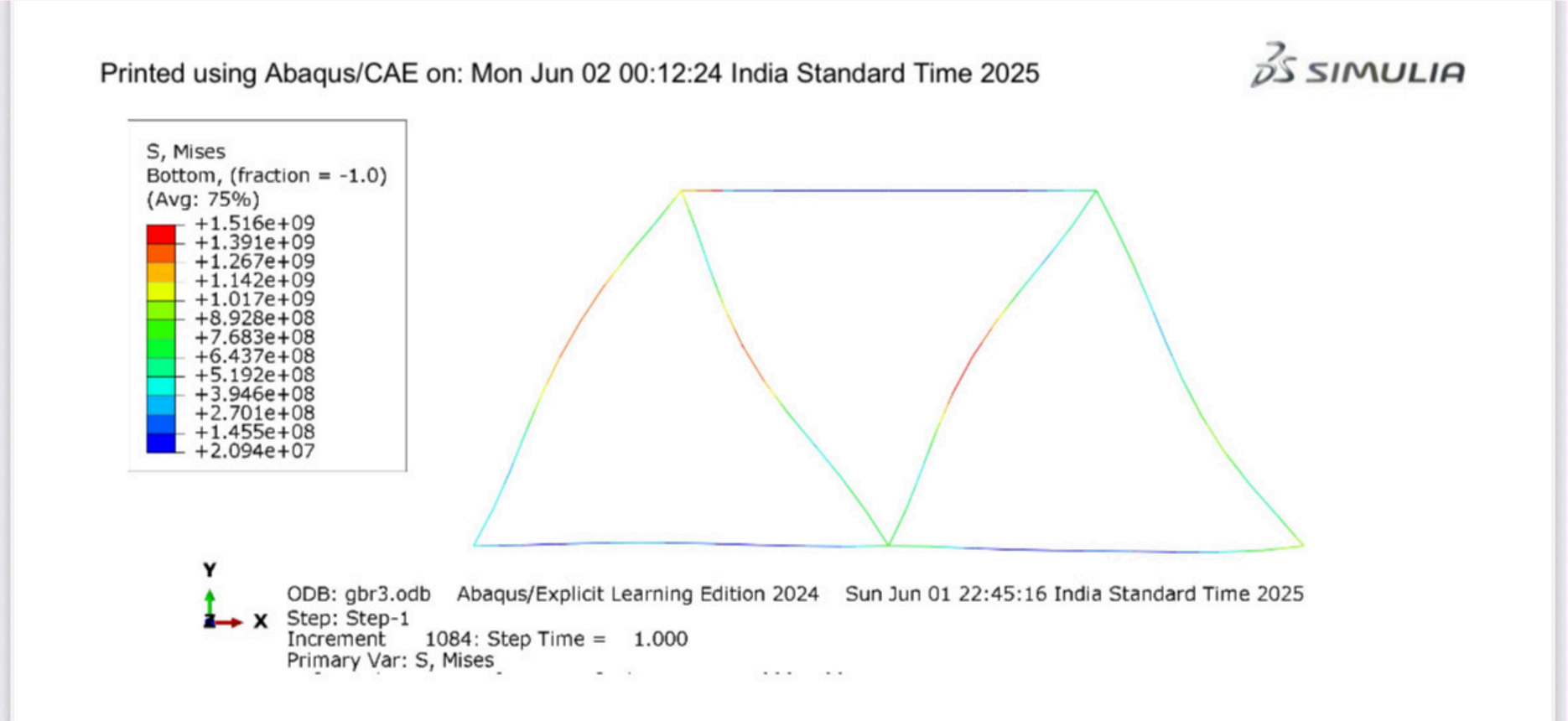
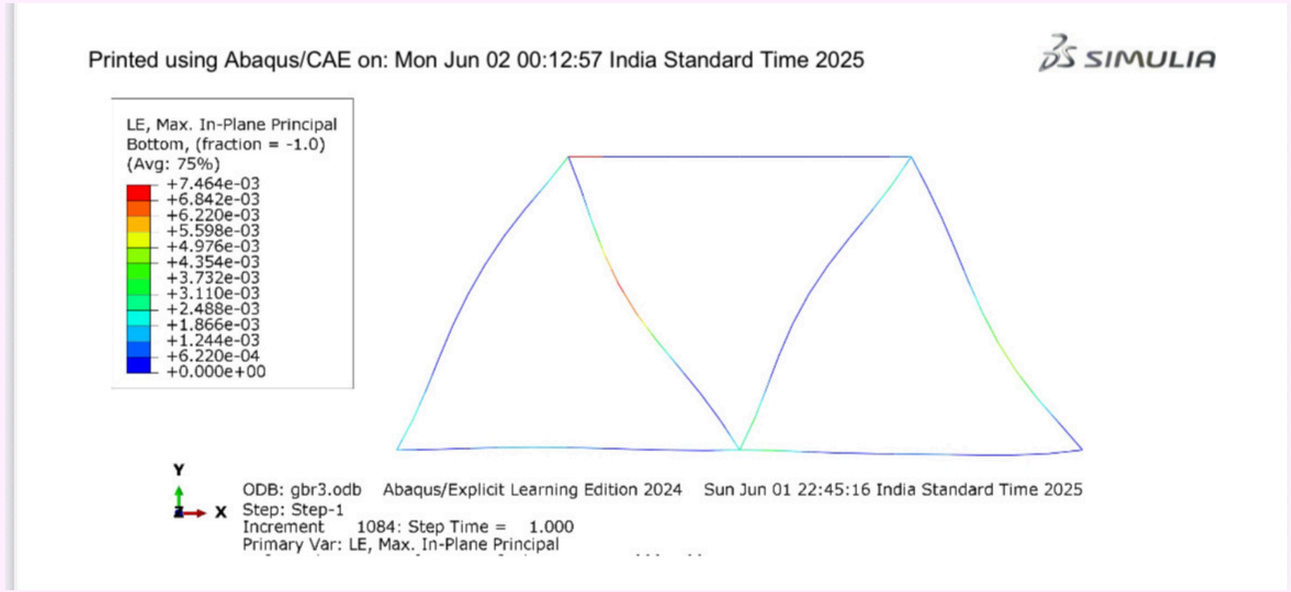
+1.606e+07
+1.473e+07
+1.340e+07
+1.207e+07
+1.074e+07
+9.409e+06
+8.078e+06
+6.747e+06
+5.416e+06
+4.086e+06
+2.755e+06
+1.424e+06
Y
X
ODB: gbr9.odb Abaqus/Explicit Learning Edition 2024 Sun Jun 01 23:05:29 India Standard Time 2025
Step: Step-1
Increment 1083: Step Time = 1.000
Primary Var: S, Mises

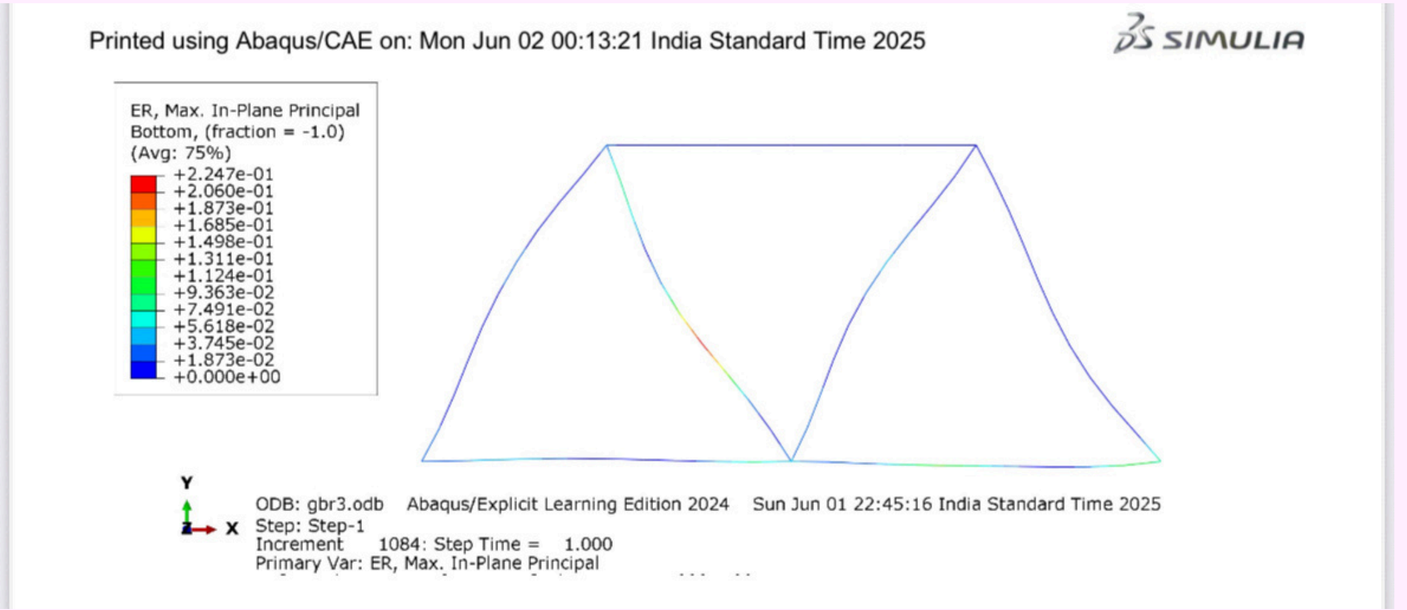
2D Truss

For v = 50mm/s:



2D Truss

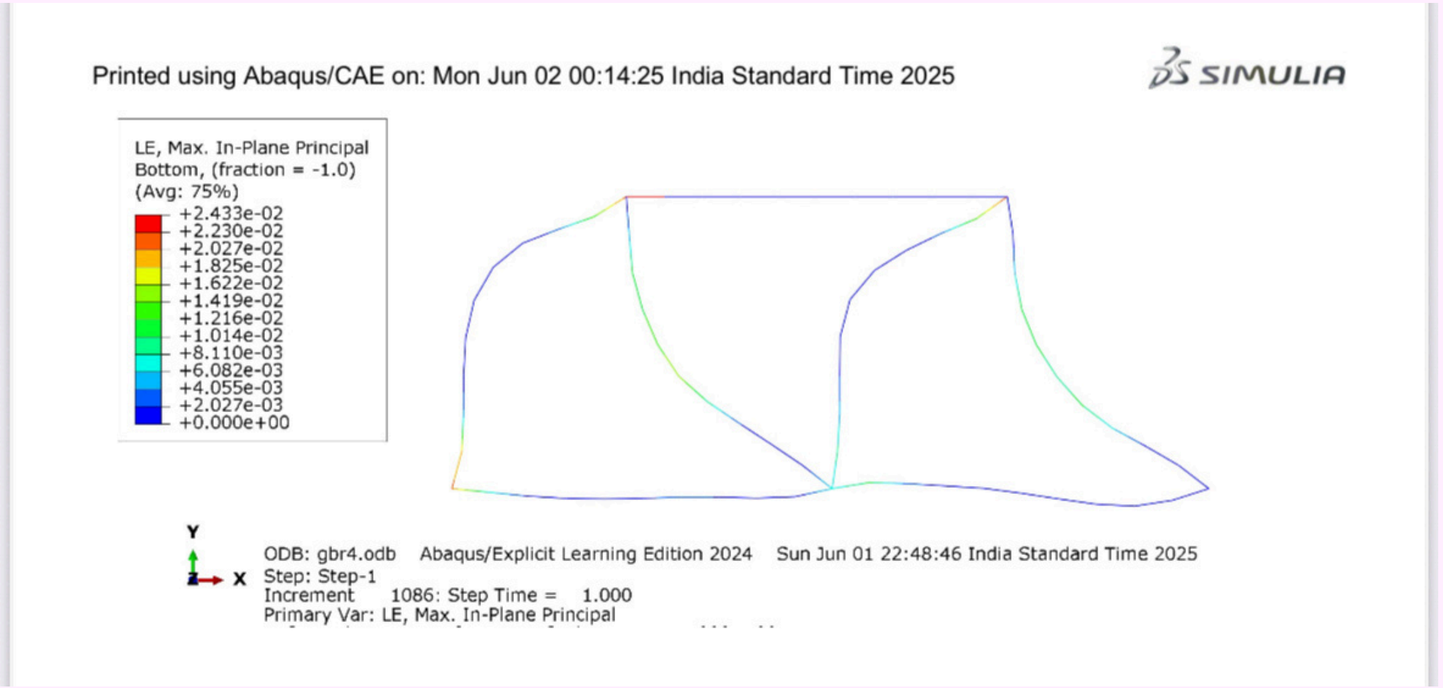

Printed using Abaqus/CAE on: Mon Jun 02 00:12:57 India Standard Time 2025
SIMULIA
LE, Max. In-Plane Principal
Bottom, (fraction = -1.0)
(Avg: 75%)
+7.464e-03
+6.842e-03
+6.220e-03
+5.598e-03
+4.976e-03
+4.354e-03
+3.732e-03
+3.110e-03
+2.488e-03
+1.866e-03
+1.244e-03
+6.220e-04
+0.000e+00
Y
X
ODB: gbr3.odb Abaqus/Explicit Learning Edition 2024 Sun Jun 01 22:45:16 India Standard Time 2025
Step: Step-1
Increment 1084: Step Time = 1.000
Primary Var: LE, Max. In-Plane Principal


Printed using Abaqus/CAE on: Mon Jun 02 00:13:21 India Standard Time 2025
SIMULIA
ER, Max. In-Plane Principal
Bottom, (fraction = -1.0)
(Avg: 75%)
+2.247e-01
+2.060e-01
+1.873e-01
+1.685e-01
+1.498e-01
+1.311e-01
+1.124e-01
+9.363e-02
+7.491e-02
+5.618e-02
+3.745e-02
+1.873e-02
+0.000e+00
Y
X
ODB: gbr3.odb Abaqus/Explicit Learning Edition 2024 Sun Jun 01 22:45:16 India Standard Time 2025
Step: Step-1
Increment 1084: Step Time = 1.000
Primary Var: ER, Max. In-Plane Principal

2D Truss

For v = 500mm/s:

2D Truss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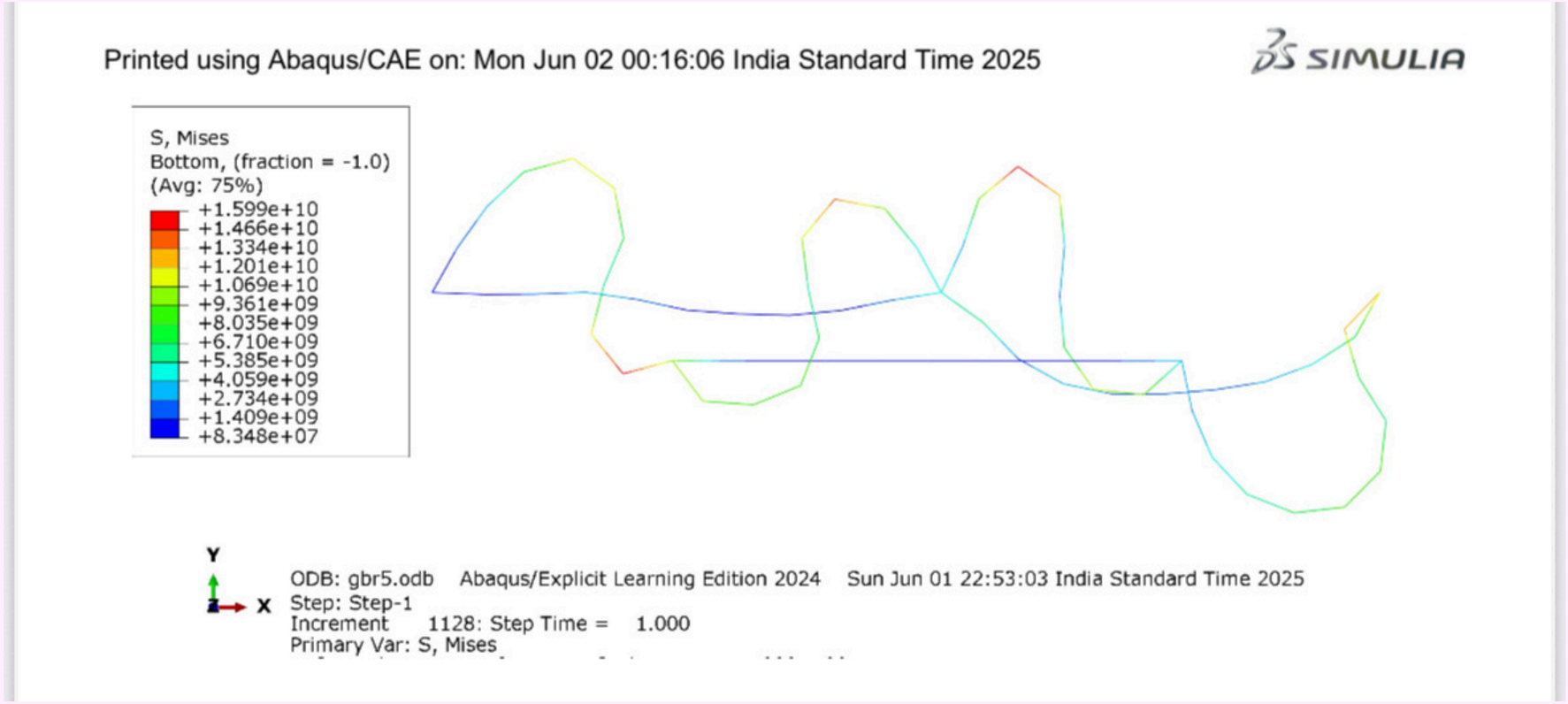
SIMULIA
LE, Max. In-Plane Principal
Bottom, (fraction = -1.0)
(Avg: 75%)
+2.433e-02
+2.230e-02
+2.027e-02
+1.825e-02
+1.622e-02
+1.419e-02
+1.216e-02
+1.014e-02
+8.110e-03
+6.082e-03
+4.055e-03
+2.027e-03
+0.000e+00
Y
X
ODB: gbr4.odb Abaqus/Explicit Learning Edition 2024 Sun Jun 01 22:48:46 India Standard Time 2025
Step: Step-1
Increment 1086: Step Time = 1.000
Primary Var: LE, Max. In-Plane Principal


Printed using Abaqus/CAE on: Mon Jun 02 00:14:49 India Standard Time 2025
SIMULIA
ER, Max. In-Plane Principal
Bottom, (fraction = -1.0)
(Avg: 75%)
+7.928e-01
+7.267e-01
+6.606e-01
+5.946e-01
+5.285e-01
+4.624e-01
+3.964e-01
+3.303e-01
+2.643e-01
+1.982e-01
+1.321e-01
+6.606e-02
+0.000e+00
Y
X
ODB: gbr4.odb Abaqus/Explicit Learning Edition 2024 Sun Jun 01 22:48:46 India Standard Time 2025
Step: Step-1
Increment 1086: Step Time = 1.000
Primary Var: ER, Max. In-Plane Principal

2D Truss

For v = 5000mm/s:



2D Truss


Printed using Abaqus/CAE on: Mon Jun 02 00:16:40 India Standard Time 2025
SIMULIA
LE, Max. In-Plane Principal
Bottom, (fraction = -1.0)
(Avg: 75%)
+8.092e-02
+7.418e-02
+6.743e-02
+6.069e-02
+5.395e-02
+4.720e-02
+4.046e-02
+3.372e-02
+2.697e-02
+2.023e-02
+1.349e-02
+6.743e-03
+0.000e+00
Y
X
ODB: gbr5.odb Abaqus/Explicit Learning Edition 2024 Sun Jun 01 22:53:03 India Standard Time 2025
Step: Step-1
Increment 1128: Step Time = 1.000
Primary Var: LE, Max. In-Plane Principal


Printed using Abaqus/CAE on: Mon Jun 02 00:16:58 India Standard Time 2025
SIMULIA
ER, Max. In-Plane Principal
Bottom, (fraction = -1.0)
(Avg: 75%)
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+1.841e+00
+1.673e+00
+1.506e+00
+1.339e+00
+1.171e+00
+1.004e+00
+8.367e-01
+6.693e-01
+5.020e-01
+3.347e-01
+1.673e-01
+0.000e+00
Y
X
ODB: gbr5.odb Abaqus/Explicit Learning Edition 2024 Sun Jun 01 22:53:03 India Standard Time 2025
Step: Step-1
Increment 1128: Step Time = 1.000
Primary Var: ER, Max. In-Plane Principal