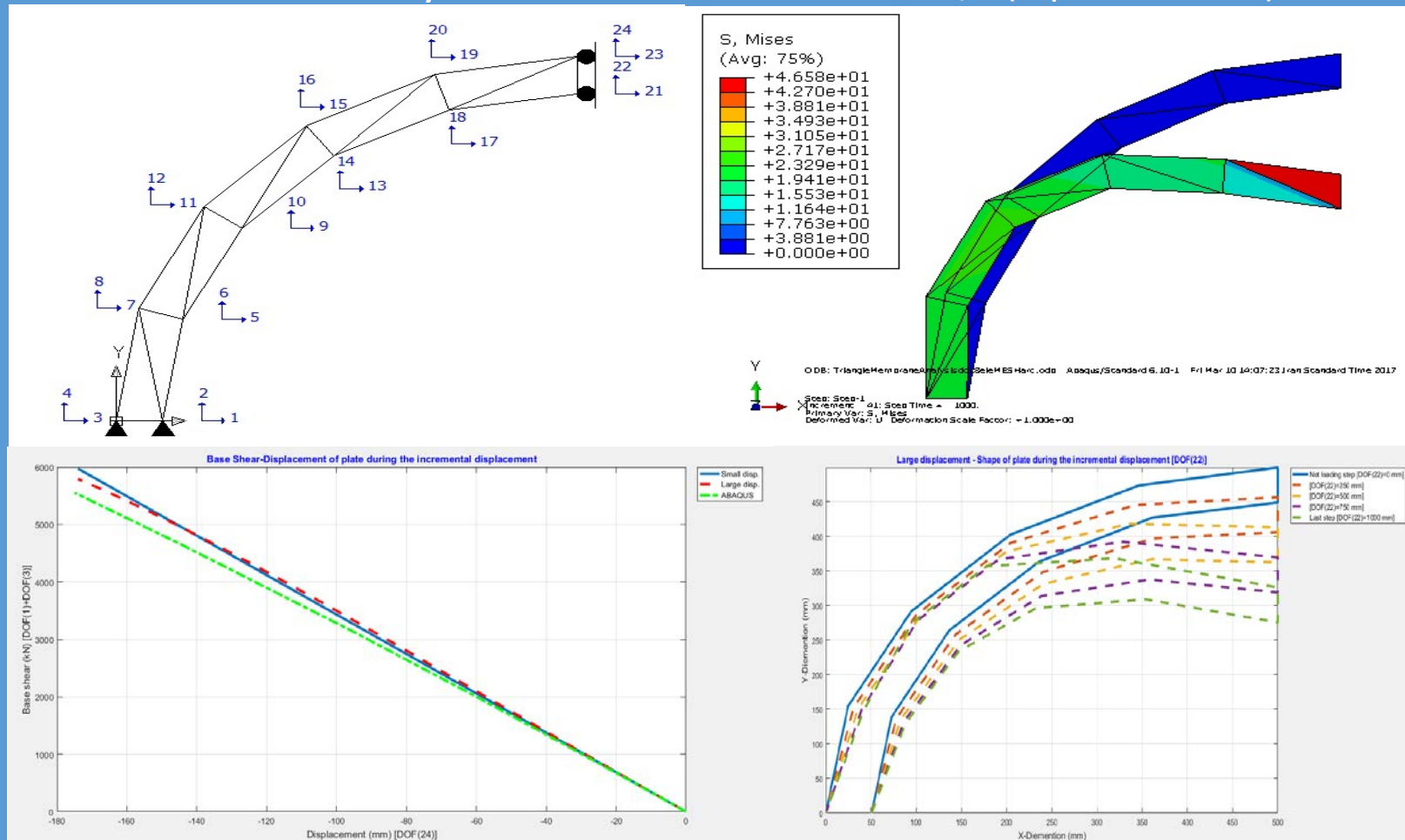


>> IN THE NAME OF GOD <<

Pushover Analysis of Triangular Steel Membrane Element Subjected to Lateral Displacement with Effect of Geometric and Material Nonlinearity and Small strain in MATLAB and ABAQUS (Displacement Control)



The MATLAB Program is Verified by ABAQUS v.6.10

This MATLAB program is written by Salar Delavar Ghashghaei - Date of Publication: March/23/2017

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Matlab Code:

[illegible]

[illegible]

(+)Increment 4 : It is converged in 2 iterations
(+)Increment 5 : It is converged in 2 iterations
(+)Increment 6 : It is converged in 2 iterations
(+)Increment 7 : It is converged in 2 iterations
(+)Increment 8 : It is converged in 2 iterations
(+)Increment 9 : It is converged in 2 iterations
(+)Increment 10 : It is converged in 2 iterations.

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. .
.

(+)Increment 791 : It is converged in 3 iterations
(+)Increment 792 : It is converged in 3 iterations
(+)Increment 793 : It is converged in 3 iterations
(+)Increment 794 : It is converged in 3 iterations
(+)Increment 795 : It is converged in 3 iterations
(+)Increment 796 : It is converged in 3 iterations
(+)Increment 797 : It is converged in 3 iterations
(+)Increment 798 : It is converged in 3 iterations
(+)Increment 799 : It is converged in 3 iterations
(+)Increment 800 : It is converged in 3 iterations

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Large Displacement Analysis

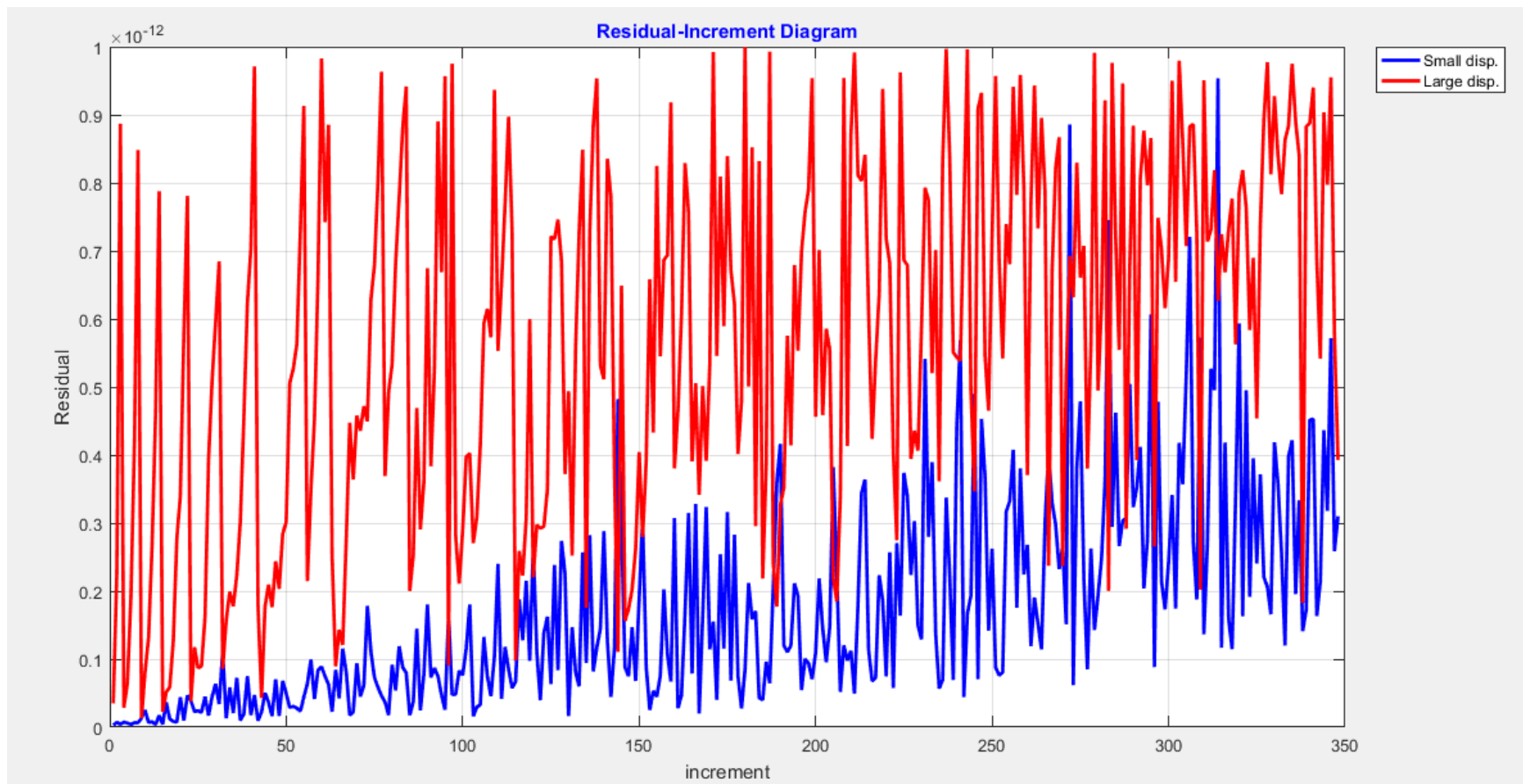
#####

(+)Increment 1 : It is converged in 2 iterations
(+)Increment 2 : It is converged in 2 iterations
(+)Increment 3 : It is converged in 2 iterations
(+)Increment 4 : It is converged in 2 iterations
(+)Increment 5 : It is converged in 2 iterations
(+)Increment 6 : It is converged in 2 iterations
(+)Increment 7 : It is converged in 2 iterations
(+)Increment 8 : It is converged in 2 iterations
(+)Increment 9 : It is converged in 2 iterations
(+)Increment 10 : It is converged in 2 iterations

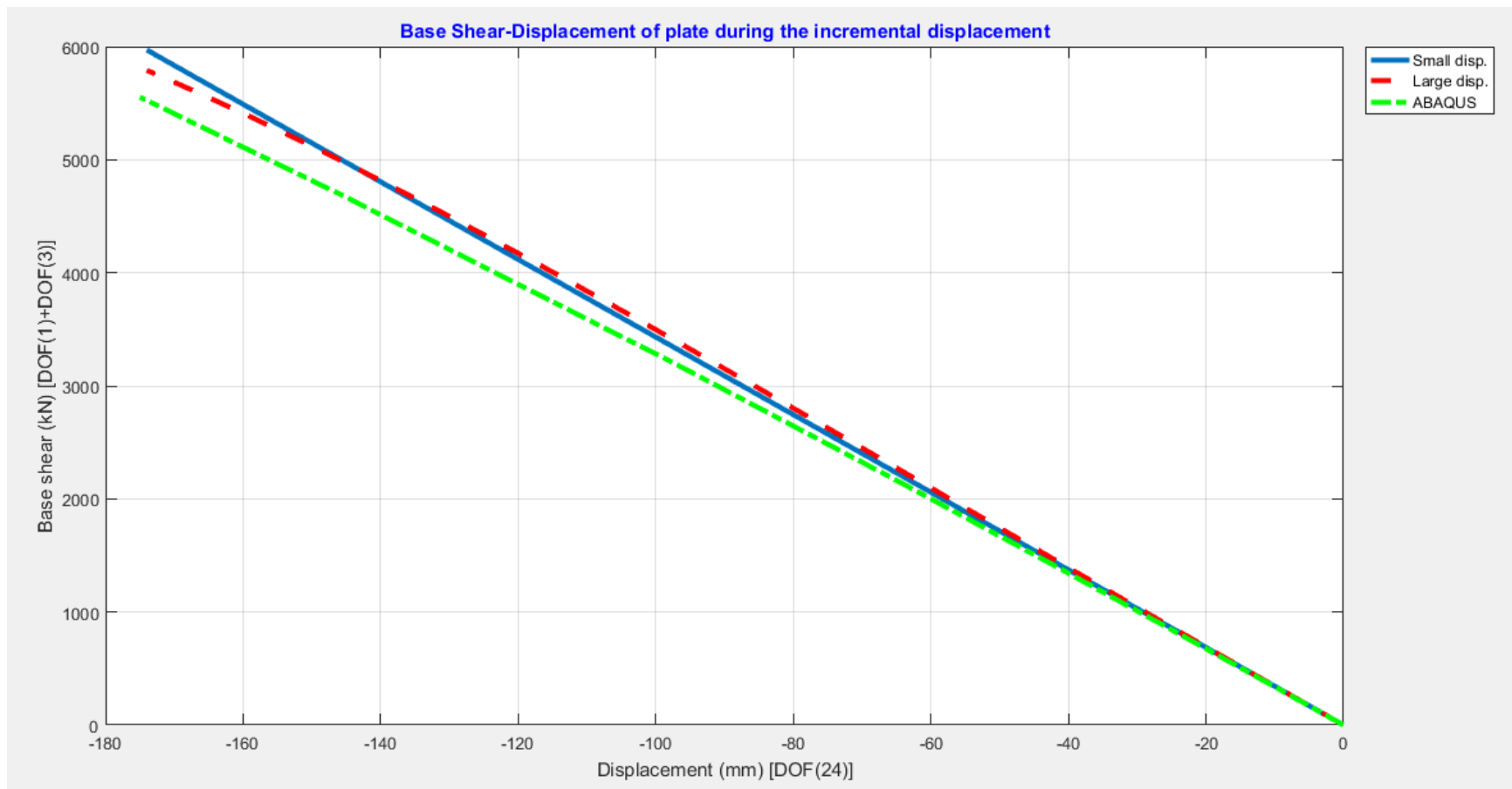
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(+)Increment 791 : It is converged in 3 iterations
(+)Increment 792 : It is converged in 3 iterations
(+)Increment 793 : It is converged in 3 iterations
(+)Increment 794 : It is converged in 3 iterations
(+)Increment 795 : It is converged in 3 iterations
(+)Increment 796 : It is converged in 3 iterations
(+)Increment 797 : It is converged in 3 iterations
(+)Increment 798 : It is converged in 3 iterations
(+)Increment 799 : It is converged in 3 iterations
(+)Increment 800 : It is converged in 3 iterations

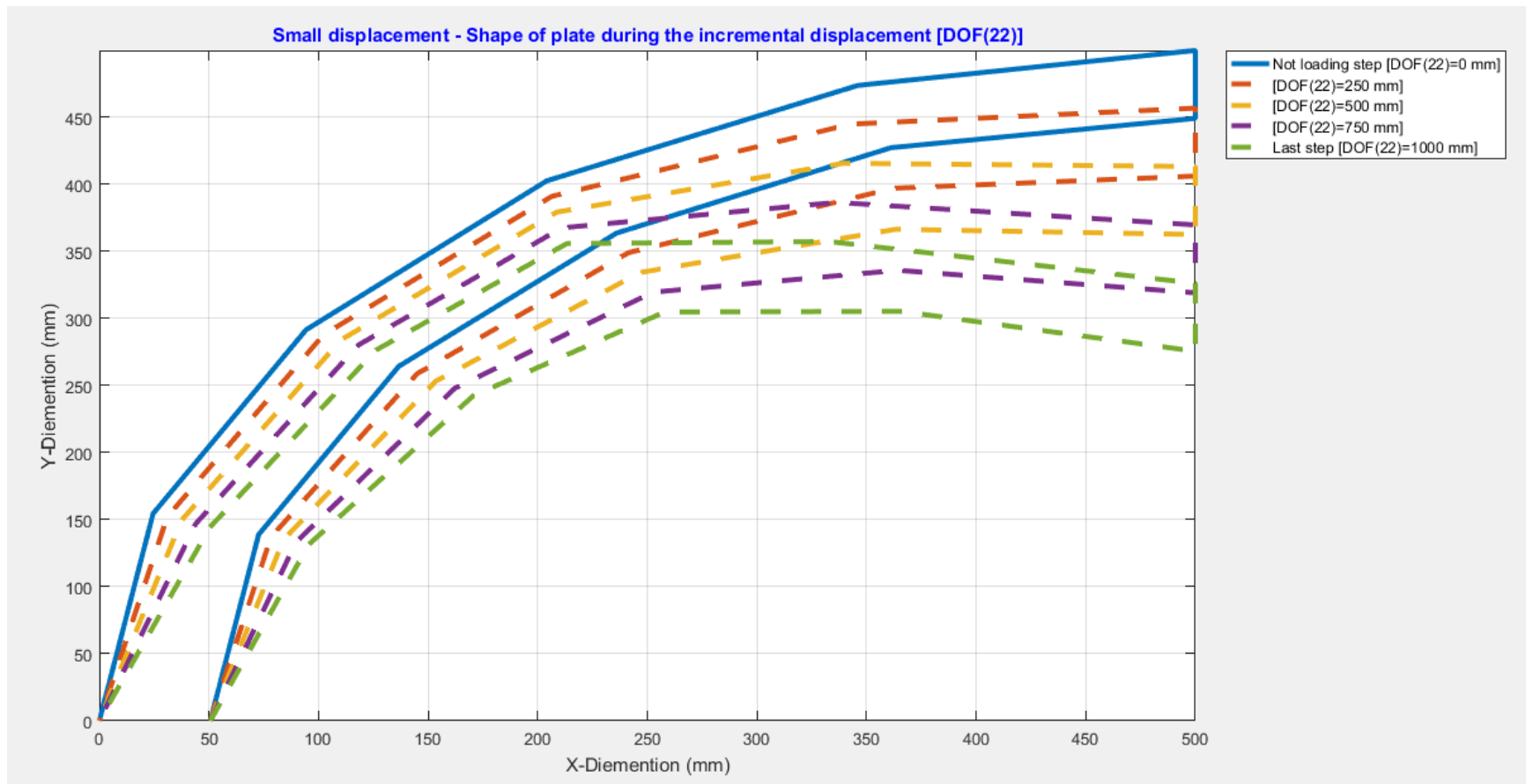
Plot :



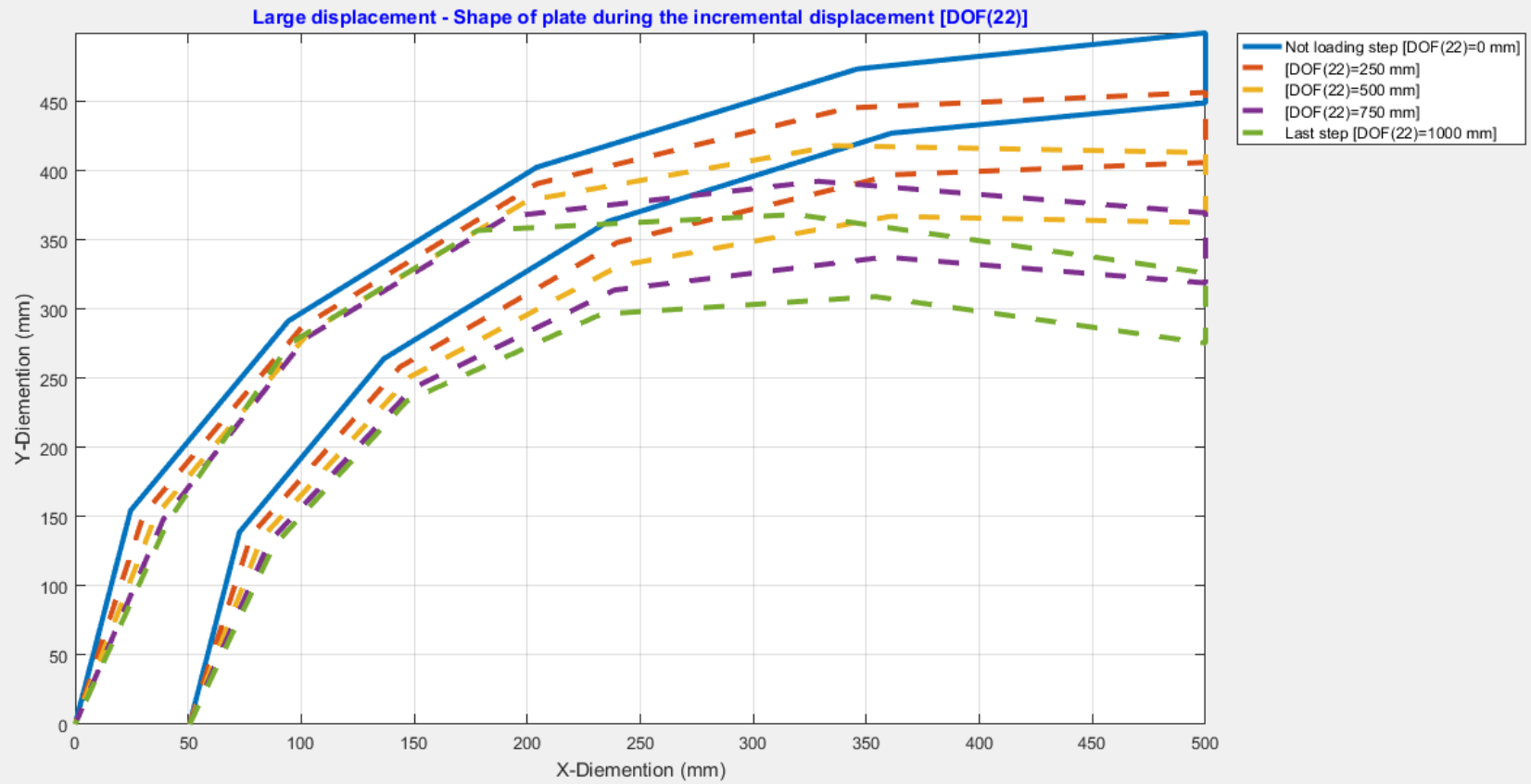
Figure(2) Residual-increment diagram



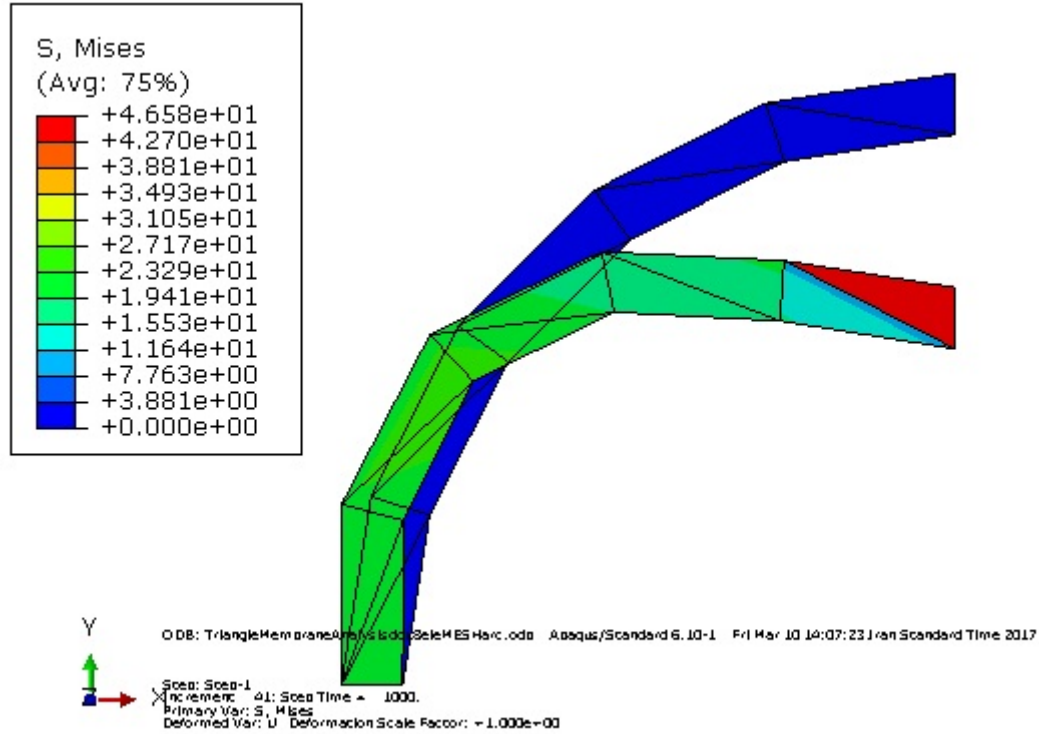
Figure(3) Force-Displacement of DOF(7) in MATLAB and ABAQUS



Figure(4) Small displacement – Shape of arc membrane element during the incremental displacement [DOF(22)]



Figure(5) Large displacement – Shape of arc membrane element during the incremental displacement [DOF(22)]



Figure(6) Large displacement – Shape of arc membrane element during the incremental displacement [DOF(22)] in ABAQUS