COMPARATION OF STRESS ANALYSIS IN SOLID WORKS AND INVENTOR PROFESSIONAL 2008

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ABSTRACT
This paper is dedicated to comparation of stress analysis in programs SolidWorks and Autodesk Inventor Professional 2008.We came on such idea because Inventor is software which is relatively new in use in Serbia but it seams to be very friendly to use. So, we want to see differences between this software and software which is used in our firms.We create the same parts in both programs and put them to the stress analyses in same conditions. Results that we reached approved our trust in Autodesk software.here are some differences, but they are in acceptable frontiers.
Also we compare the results with same laboratory analyses and we find that software can simulate real condition.
Keywords: stress analyses

1. INTRODUCTION
As teaching staff in our schools we are using software as SolidWorks and Inventor in purpose to teach students to design plastic, wood, metal subject in industrial and home use. But also we are teaching them elements of technologies that are necessary to be used in production of those subject. One of element is also stress analysis that provide analysis of factor of security and elongation of subject under stress.

2. EXPERIMENT
In this experiment we use result of laboratory experiment that was earlier conduct. We design the same part in SolidWorks and Inventor Professional 2008. After that we input material facts in our software and we run stress analysis. For us was the crucial that stress analysis were not conducted in the same software. For SolidWorks we use CosmosWorks analysis, and for Inventor we use Ansys analysis that are implementing in Inventor.

3. FACTS OF EXPERIMENT
Force that we use was axial force on one side of object, and we constrain object on its other side.

Intensity of the force was 10000N. Material of object is cast alloy steel. Object was the same dimensions as object which was used in laboratory.
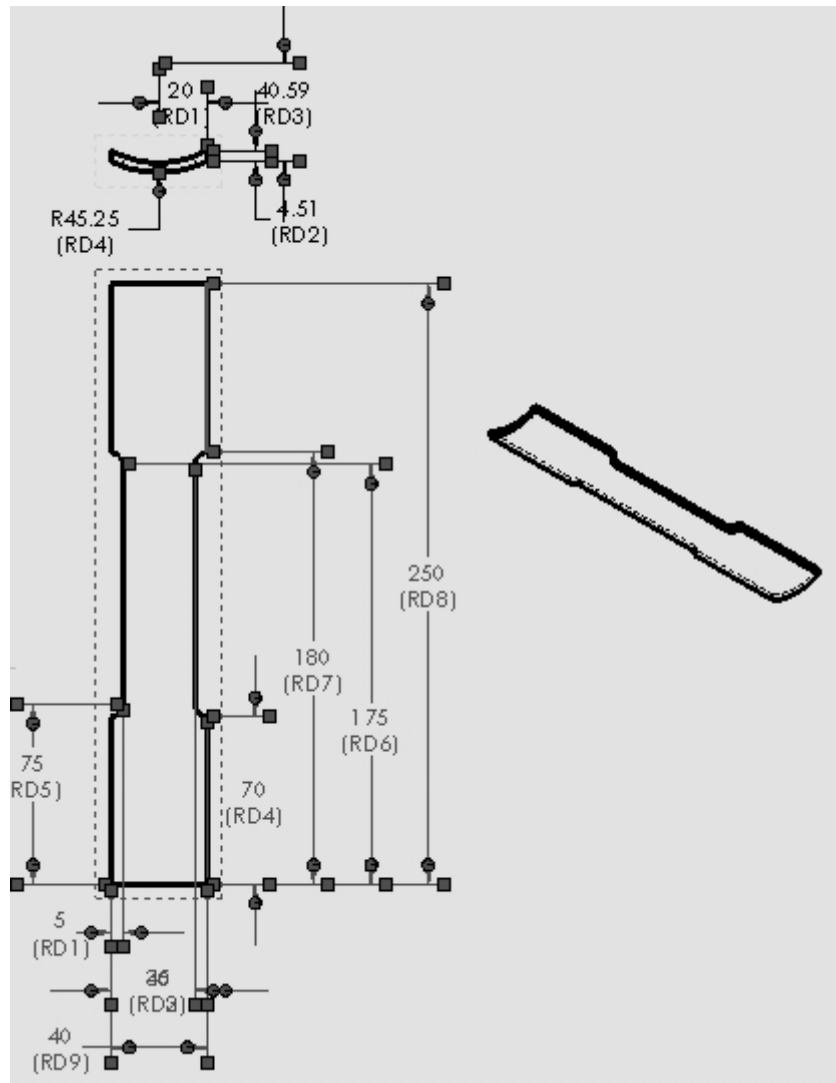
4. SKETCH OF OBJECT

Figure 1. Sketch of object

5. RESULTS
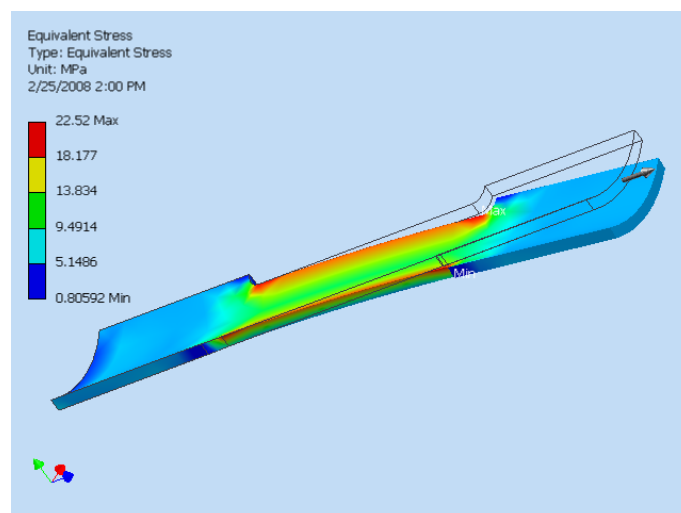
After we use stress analysis we get next results

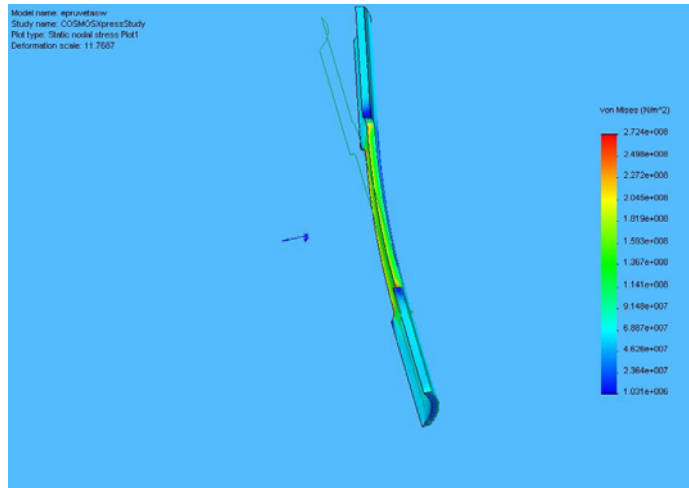*Figure 2. Equivalent stress in Inventor*

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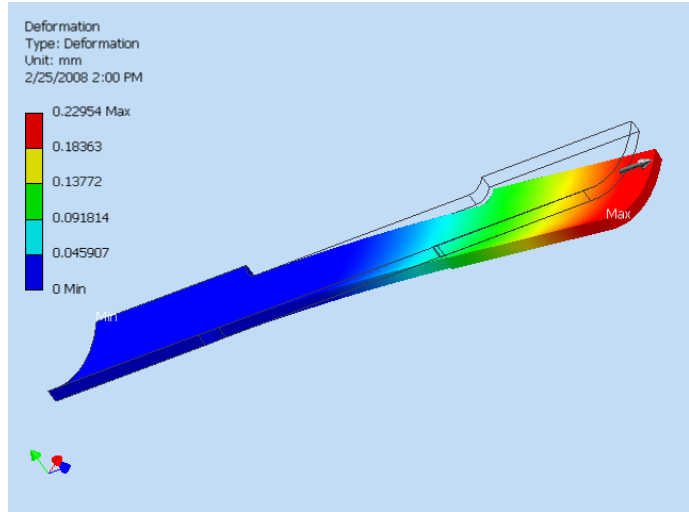
Figure 3. Equivalent stress in SolidWorks

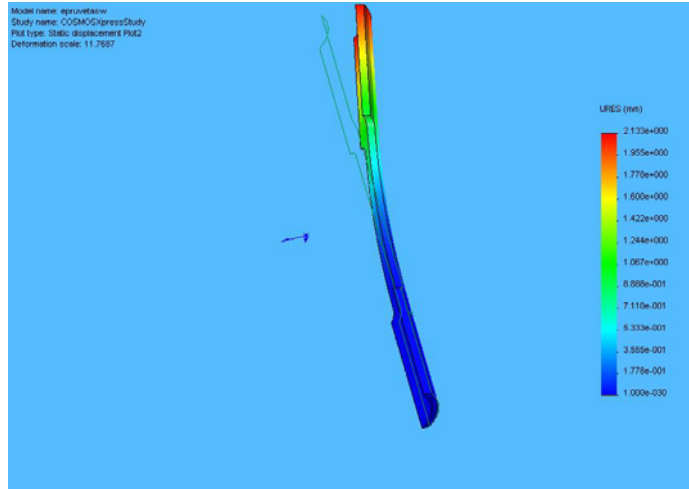*Figure 4. Elongation on subject in Inventor*

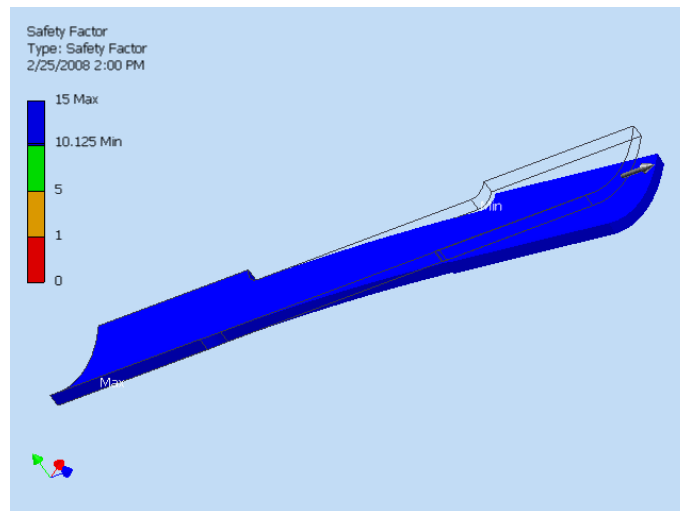*Figure 5. Elongation on subject in SolidWorks*
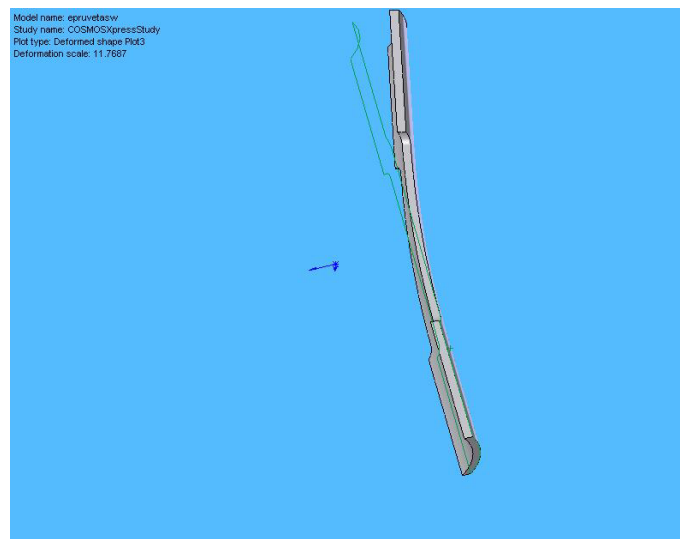
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Figure 6. Safety factor in Inventor

Figure 7. Safety factor in SolidWorks

6. CONCLUSION

If we make same analysis of results we will see that differences between the results in programs are less than 2% that give us right to say that the both software are equally reliable to use in this analysis. So if someone uses SolidWorks they can use CosmosWorks as standard for stress analysis, and also those who use Inventor should use Ansys as software for analysis.

7. REFERENCES

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