



Equation-Based Modelling: True Large Strain, Large Displacement And Anand's Plasticity Model with The ComSol Deformed Mesh Module

SIAD

O. Toscanelli^{*1}, V. Colla¹, M. Vannucci¹

¹Scuola Superiore S. Anna

^{*}Viale Rinaldo Piaggio 34 - 56025 Pontedera (Pisa) Italy, tojfl@sssup.it

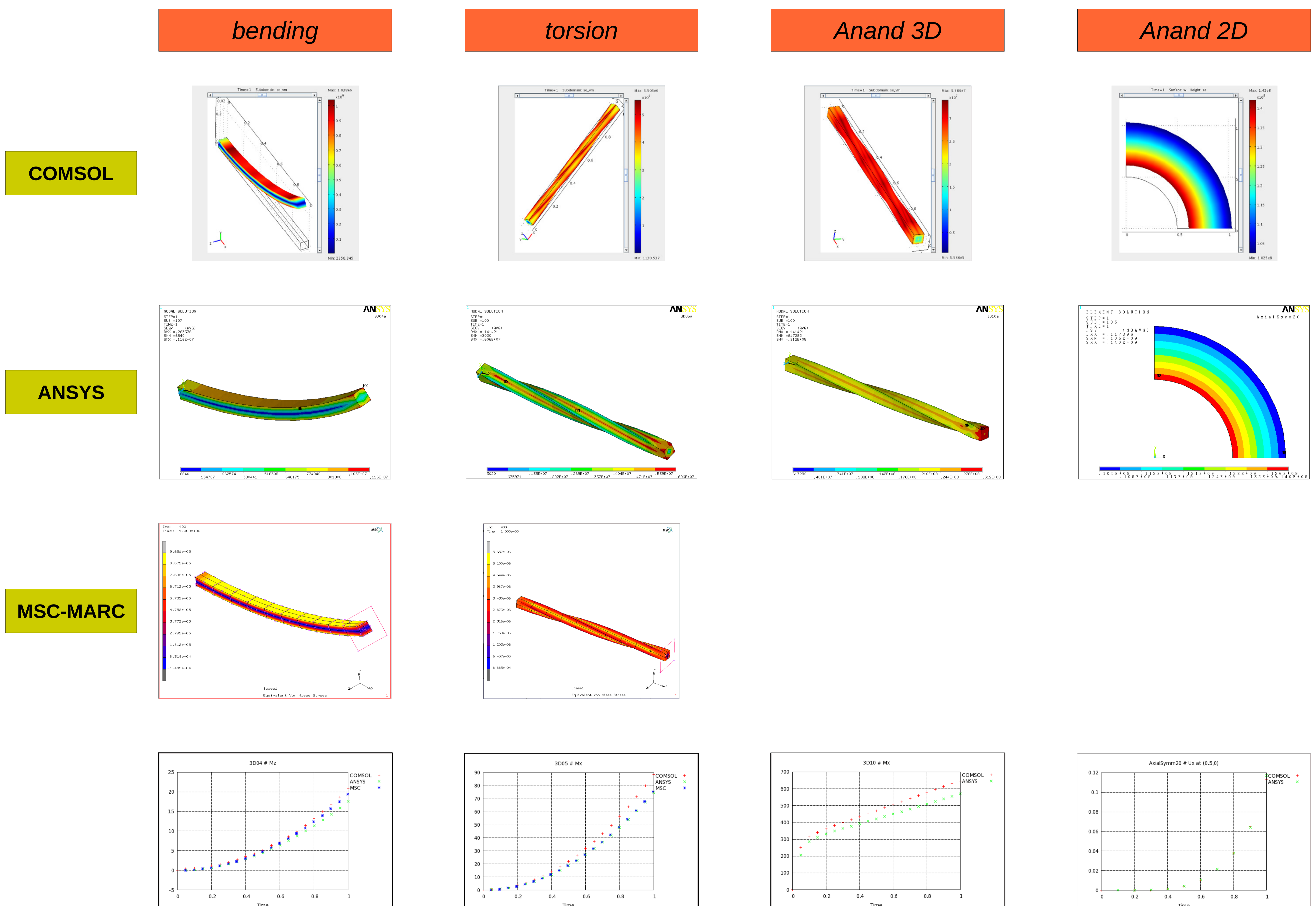
The velocity as dependent variable allows a general approach to the structural mechanics. With the same set of equations is possible:

- to model problems both with material boundary and/or no-material boundary;
- to easily include generic and complex material model.

Furthermore it allows to use a no-material mesh, reducing powerfully the mesh distortion. So the case of large strain and displacement is well treated.

The aim of this work is to study and verify the velocity approach, using COMSOL with its Equation-Based Modelling and Deformed Mesh Module.

For some cases the results are compared with those obtained from ANSYS and MSC-MARC.



The results are those expected and agree with those of ANSYS and MSC-MARC. So, the velocity approach proposed, within the limits of this preliminary work, is suitable for structural mechanics.

Scuola Superiore Sant'Anna, Steel and Industrial Automation Division (SIAD)

Polo Sant'Anna Valdera, Viale Rinaldo Piaggio 34, 56025 Pontedera (PI)
 Contacts: **Valentina Colla** (colla@sssup.it) Tel.: +39 050 883079 Fax: +39 050 883333