**Coupled elasto-plastic self-consistent and finite element crystal plasticity modeling: Applications to sheet metal forming processes**

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**Introduction**
Sheet metal forming simulations are usually performed with shell finite elements. We investigate differences in cup drawing predictions between conventional and continuum shell elements while using an elasto-plastic self-consistent (EPSC) model as a constitutive relation [1].

**Material**
- Calibration of hardening parameters.

**Results**
Deep drawing simulation of AA6022-T4 sheet is performed with conventional and continuum shell elements. The results are compared after forming and after springback.

The blank holder force is set to 5000 N. The coefficient of friction is set to 0.05.

**Conclusion**
The coupling of EPSC model with shell finite elements was successfully performed. Both continuum and conventional shell elements predicted similar stress levels and stress distribution after forming, while the cup shape and residual stress after springback exhibited differences.

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**References**