

## **ABSTRACT**

The calibration of yield functions for numerical sheet forming simulations is done using different experimental approaches such as the uniaxial tensile test, the bulge test, etc. How accurately the material behavior of dedicated aluminum, conventional and high strengths steel grades subjected to various loading conditions can be modeled is investigated using e.g. uniaxial tensile test data only. Different formulations of yield functions that are widely used in industry (e.g. Hill'48, Hosford'79, Hill'90) are considered. It is shown that tensile test data is insufficient to successfully calibrate yield functions for numerical sheet forming simulations especially for aluminum and pronounced anisotropic steel. The use of improved formulations of yield functions is emphasized.