Thermomechanical modelling of steels behaviors at semi-solid state

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**Short Abstract.** There are only few applications of semisolid processing of higher melting point alloys. Steel is a particularly challenging material to semi-solid process because of about 1400°C temperatures involved... An experimental protocol was determined to characterize the thermomechanical behaviors. Uniaxial tensile and compressive tests were carried out on semi-solid specimen having >0.8 solid fraction for different ram speeds and temperatures. Experimental results are used to improve the thermomechanical modelling of steels behaviors at semi-solid state.