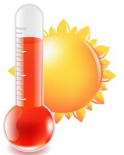
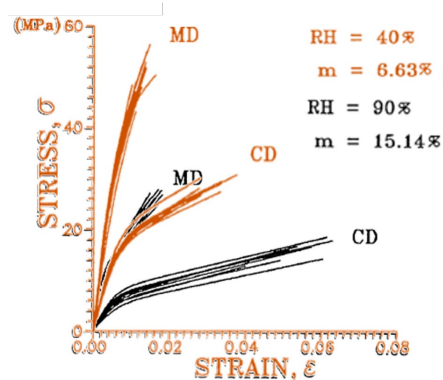
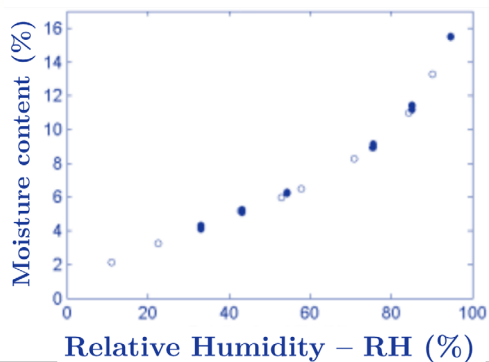




Modeling of the Mechanical Properties in Paperboard *influenced by Temperature and Moisture*



The influence of moisture content on the nonlinear constitutive behavior of cellulosic materials, Yeh K. C. et al., International Paper Physics Conference (1991), p. 695-711

During its lifetime, a paperboard beverage package is exerted to different temperatures and moisture conditions during usage. Different seasons during the year and the countries local climate may have a large influence of the paperboard material properties. Therefore, an increased knowledge is needed how the packaging material reacts to the prevailing loading scenario during the complete lifecycle of the package. Virtual twins, i.e. a computer replica of a physical package, is today commonly used during the package development. This master thesis project is focused on the mechanical material modeling of paperboard, i.e. constitutive material behaviour. A combination of experimental testing and virtual testing (FEM) in Abaqus™ will be performed. The focus is to develop a suitable engineering approach of how to implement the moisture and temperature dependency of the paperboard based on the physical test results into the virtual package simulation models.

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