

# Modelli numerici elasto-plastici

## Hardening isotropo e cinematico

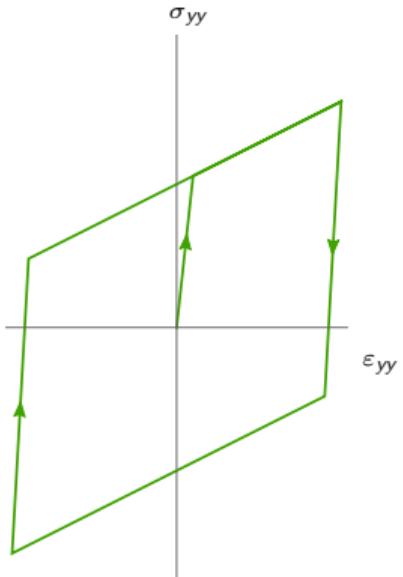
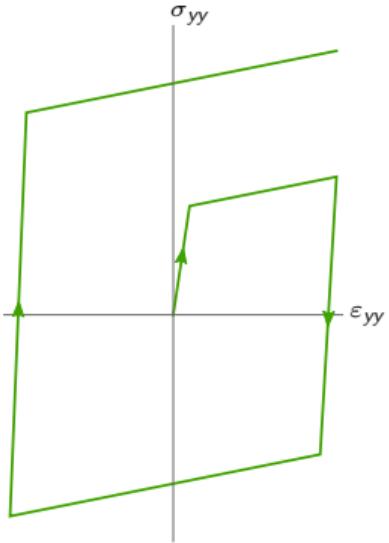
Alessandro Mastrofini

Meccanica Computazionale dei Tessuti e Biomateriali  
Università degli Studi di Roma Tor Vergata

2022

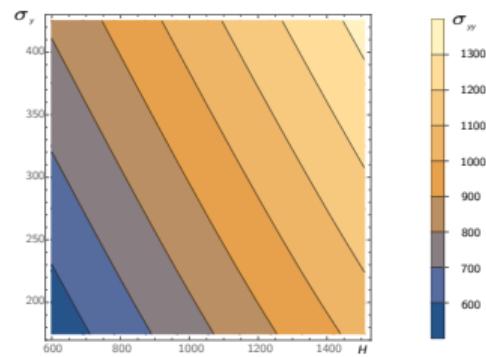
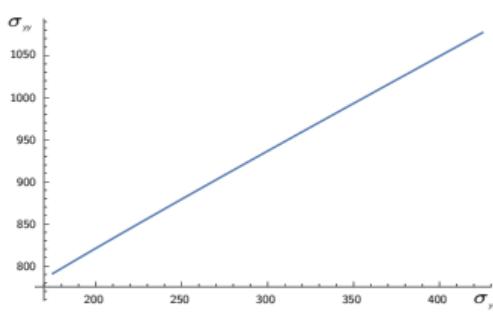
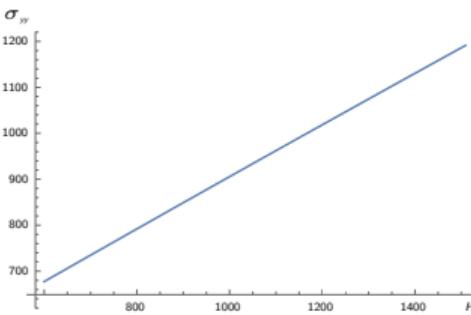
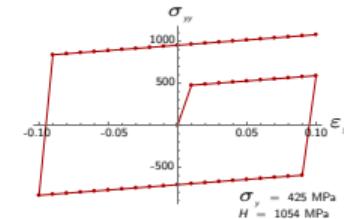
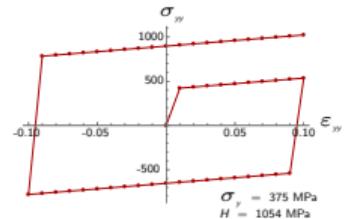
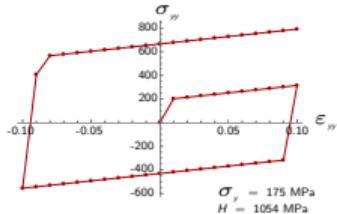
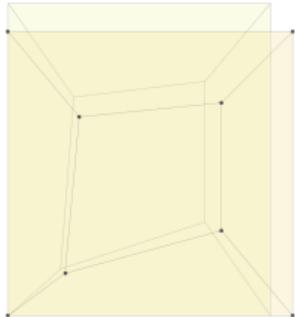
# Structural behaviour

---

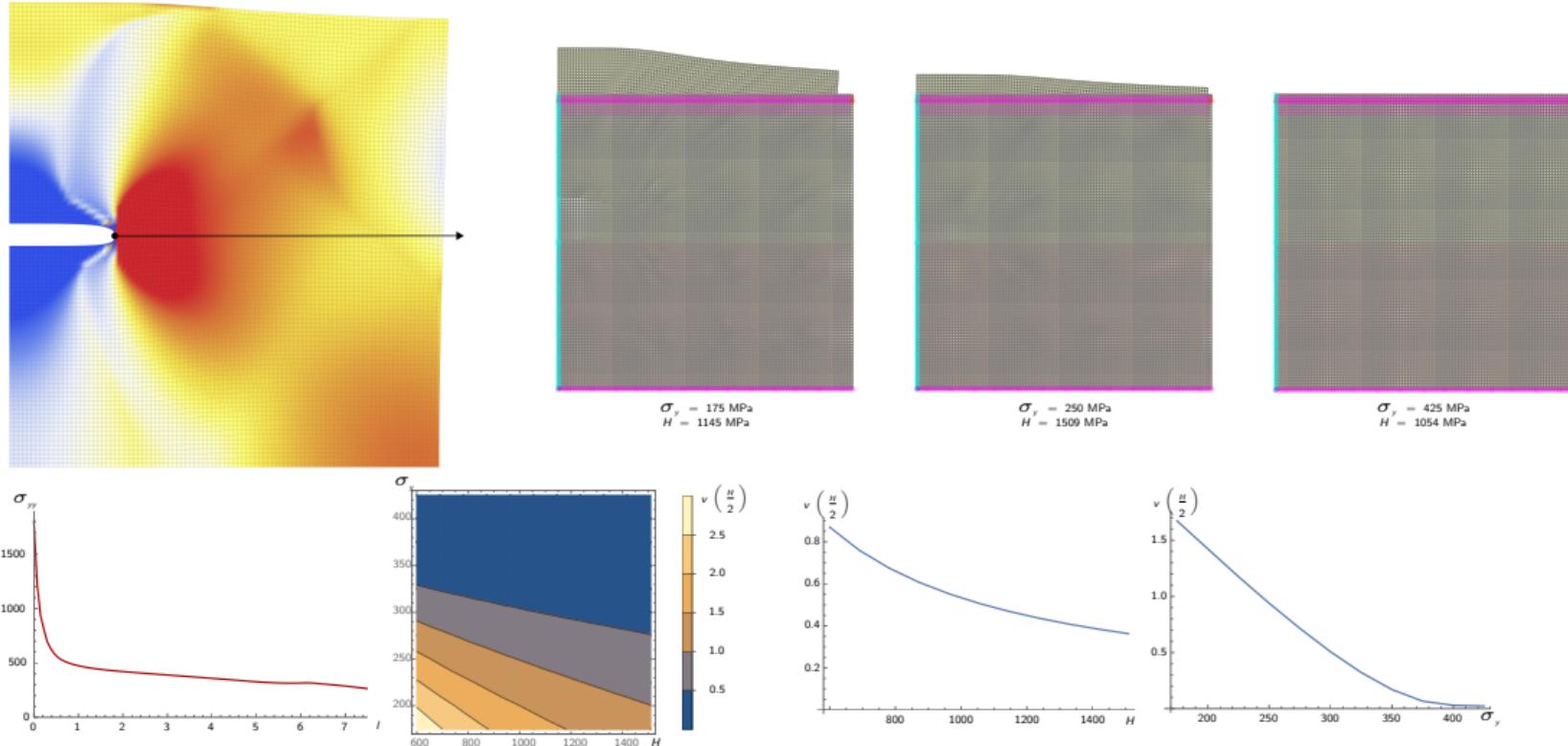


$\sigma_y$ (MPa)	$\sigma_u$ (MPa)	$\varepsilon_u$ (%)
175	500	45
190	600	45
280	680	35
450	700	25
345	517	25
276	517	30
414	274	20
276	759	60

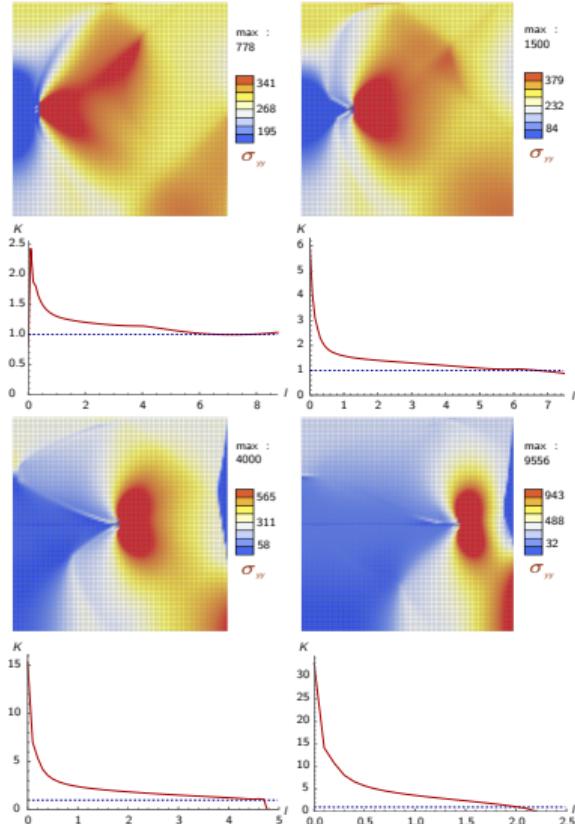
# Patch test



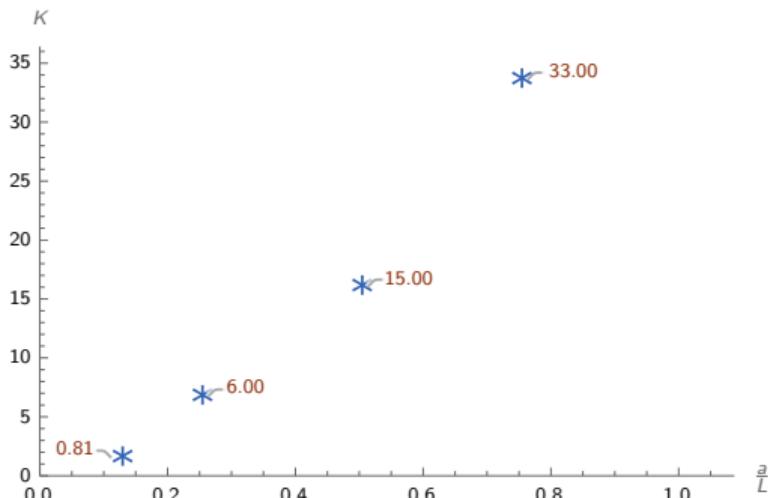
# Crack plate



# Stress intensity factor



$$K = \frac{\sigma_y}{q}$$



# Isotropic and kinematic hardening

