Analysis of stresses and strains

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Abstract

1. Introduction

2. Models of Representative Volume Element (RVE)

3. Stresses at the interface

3.1. σ_{rr}

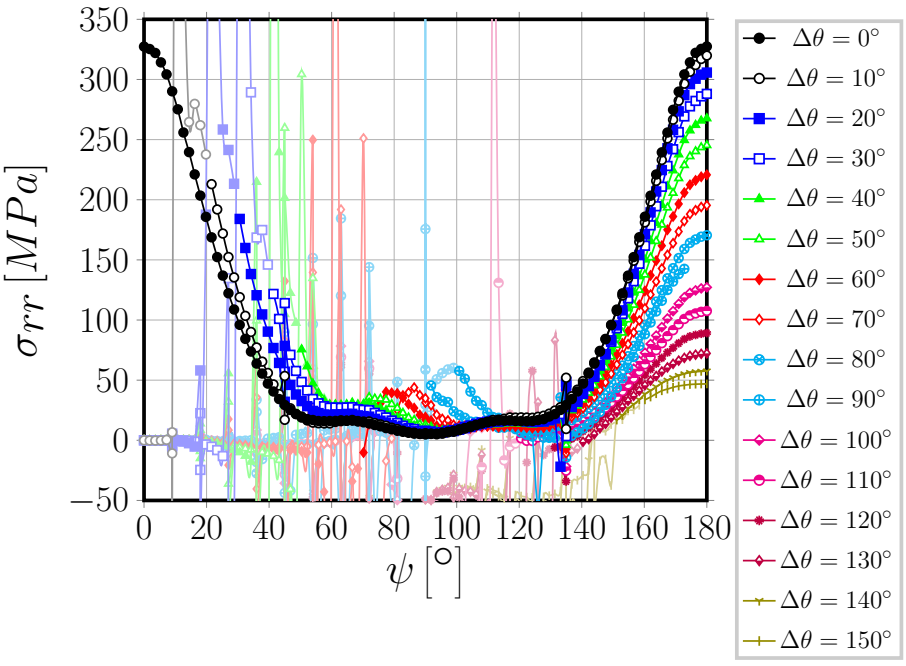

Figure 1: σ_{rr}, $11 \times 1 - free$. $V_f = 60\%$, $\varepsilon_x = 1\%$.

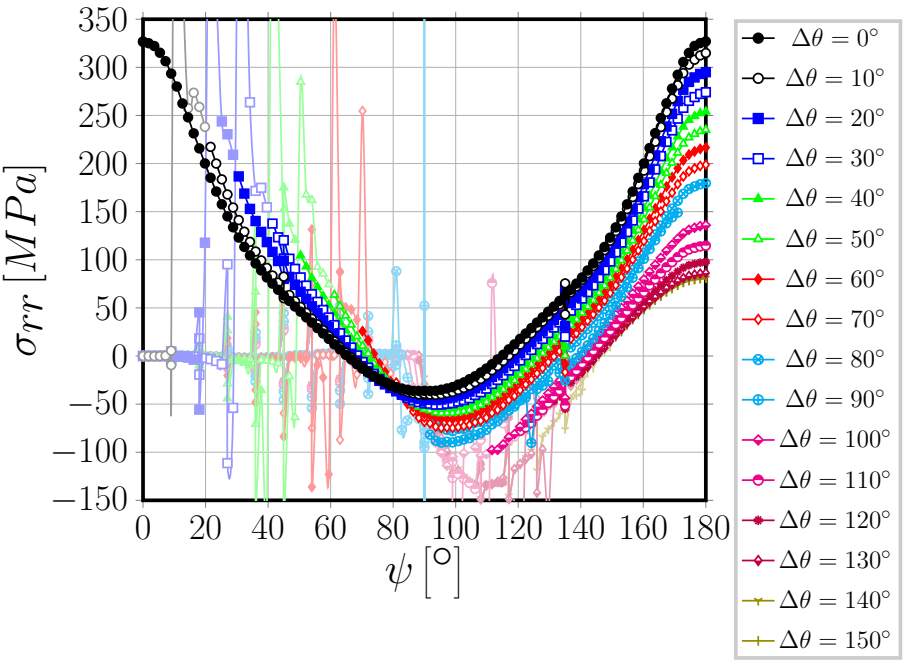

Figure 2: σ_{rr}, $11 \times 1 - 1 \cdot t_{90°}$. $V_f = 60\%$, $\varepsilon_x = 1\%$.

3.2. $\sigma_{\theta\theta}$

3.3. $\tau_{r\theta}$

4. Conclusions

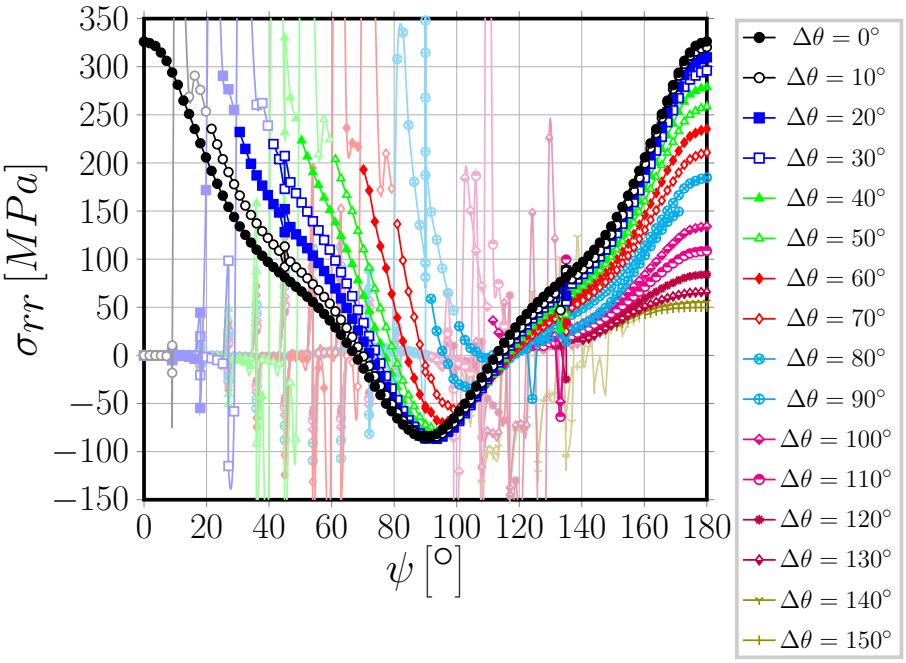

Figure 3: σ_{rr}, $11 \times 1 - symm.$ $V_f = 60\%$, $\varepsilon_x = 1\%$.

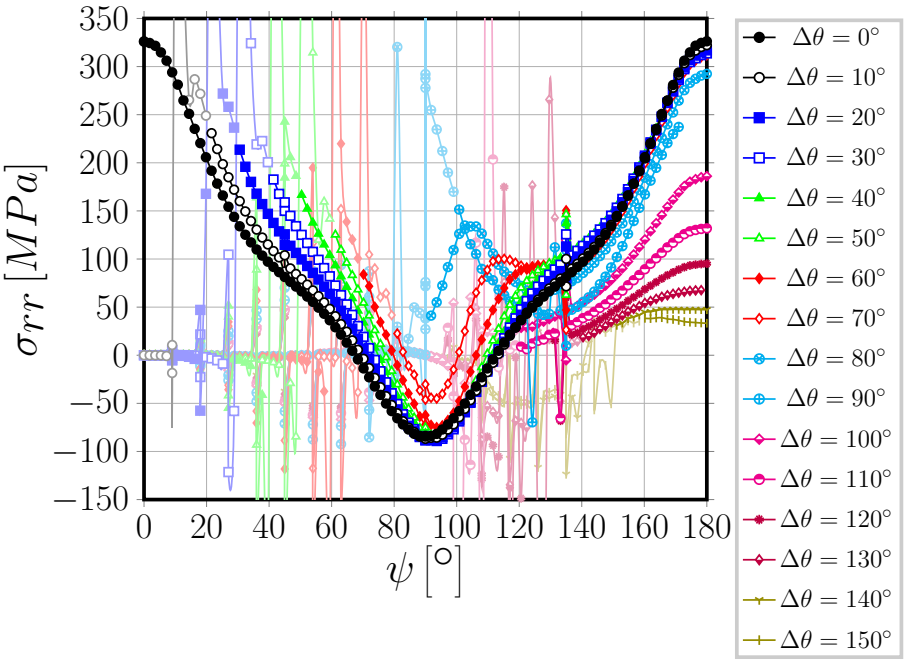

Figure 4: σ_{rr}, $11 \times 1 - asymm.$ $V_f = 60\%$, $\varepsilon_x = 1\%$.

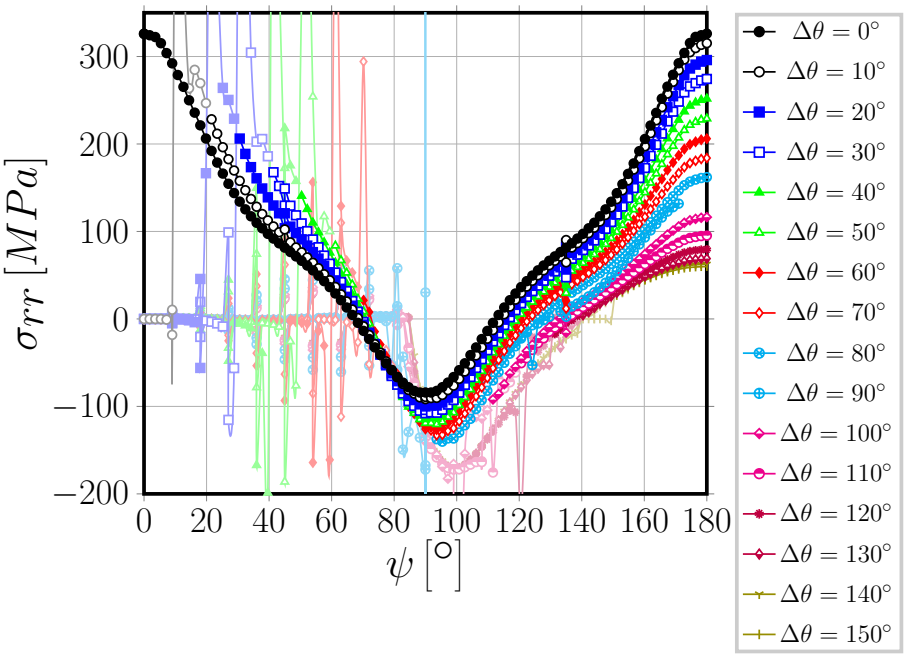

Figure 5: σ_{rr}, $11 \times 3 - free.$ $V_f = 60\%$, $\varepsilon_x = 1\%$.

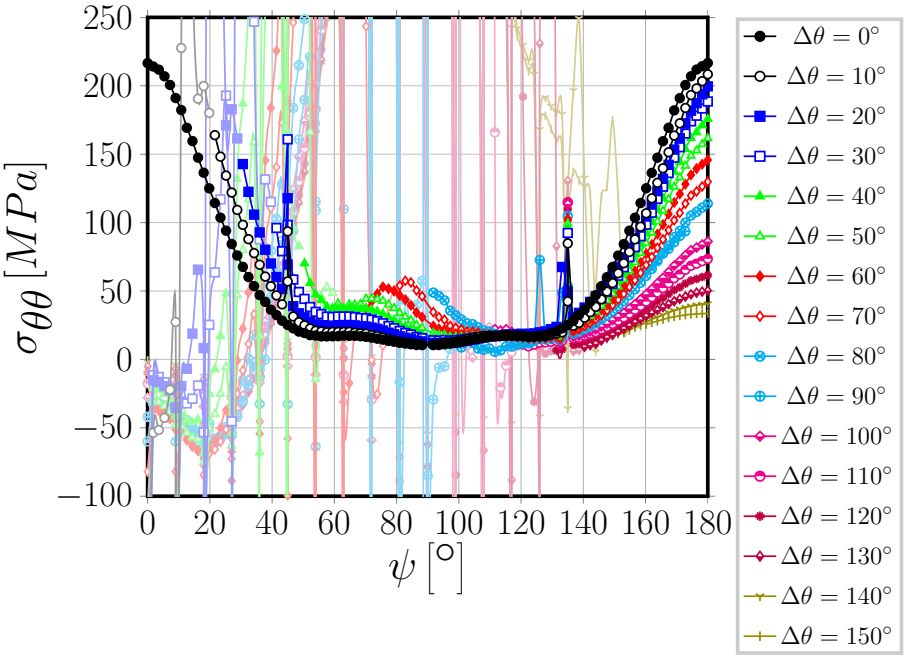

Figure 6: $\sigma_{\theta\theta}$, $11 \times 1 - free$. $V_f = 60\%$, $\varepsilon_x = 1\%$.

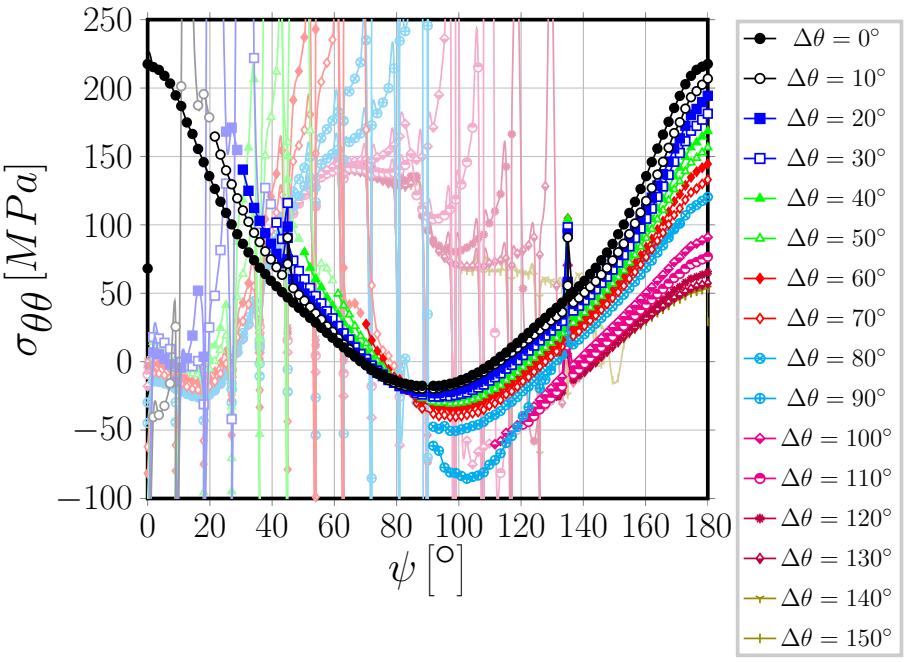

Figure 7: $\sigma_{\theta\theta}$, $11 \times 1 - 1 \cdot t_{90°}$. $V_f = 60\%$, $\varepsilon_x = 1\%$.

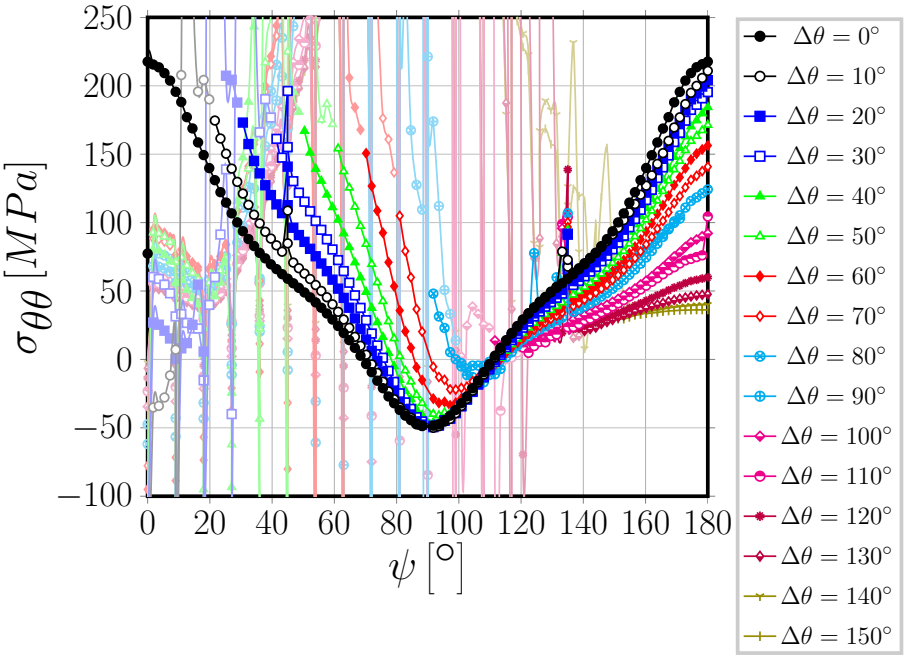

Figure 8: $\sigma_{\theta\theta}$, $11 \times 1 - symm.$ $V_f = 60\%$, $\varepsilon_x = 1\%$.

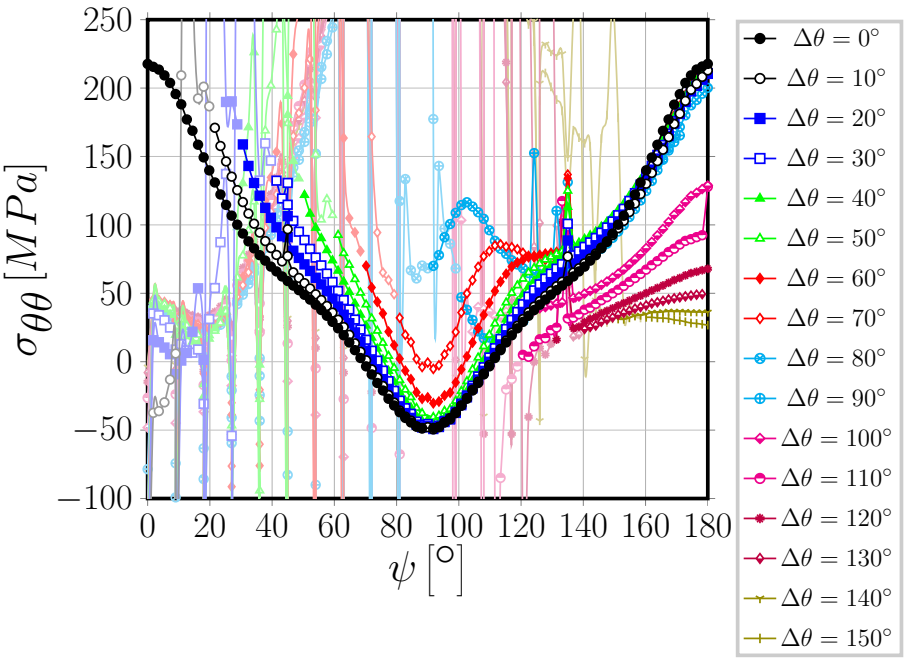

Figure 9: $\sigma_{\theta\theta}$, $11 \times 1 - asymm.$ $V_f = 60\%$, $\varepsilon_x = 1\%$.

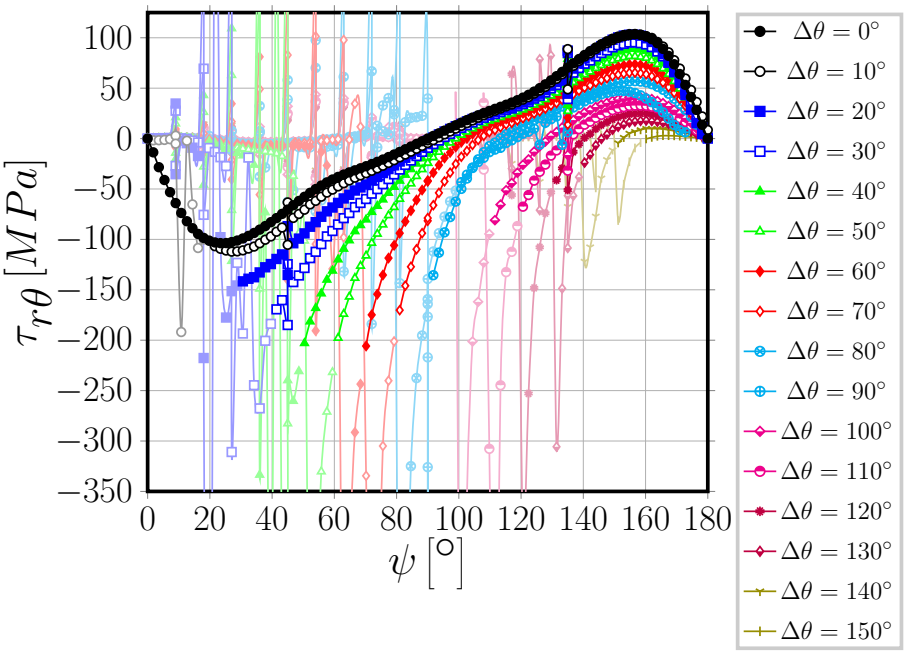

Figure 10: $\tau_{r\theta}$, $11 \times 1 - free$. $V_f = 60\%$, $\varepsilon_x = 1\%$.

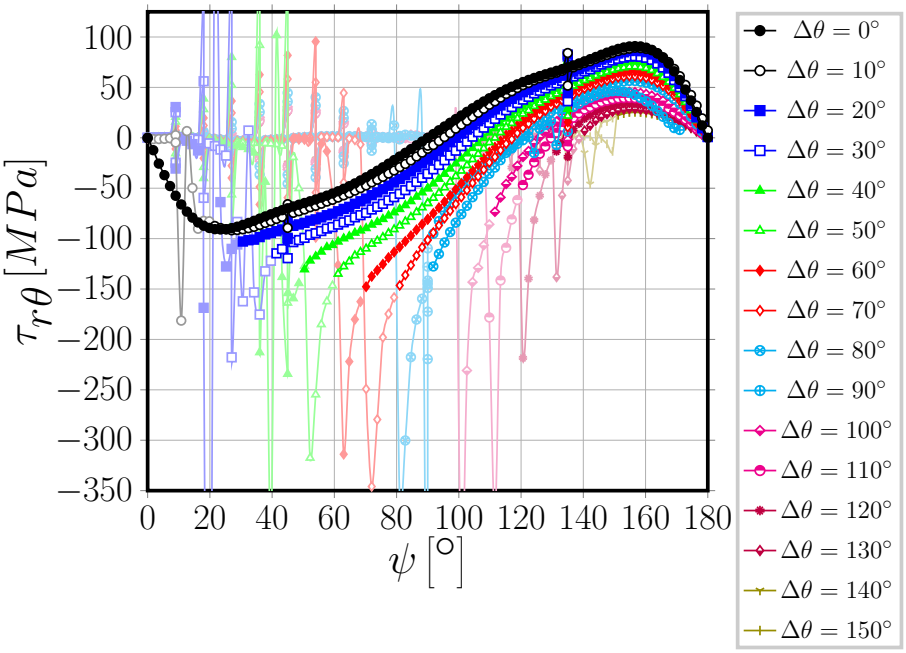

Figure 11: $\tau_{r\theta}$, $11 \times 1 - 1 \cdot t_{90^\circ}$. $V_f = 60\%$, $\varepsilon_x = 1\%$.

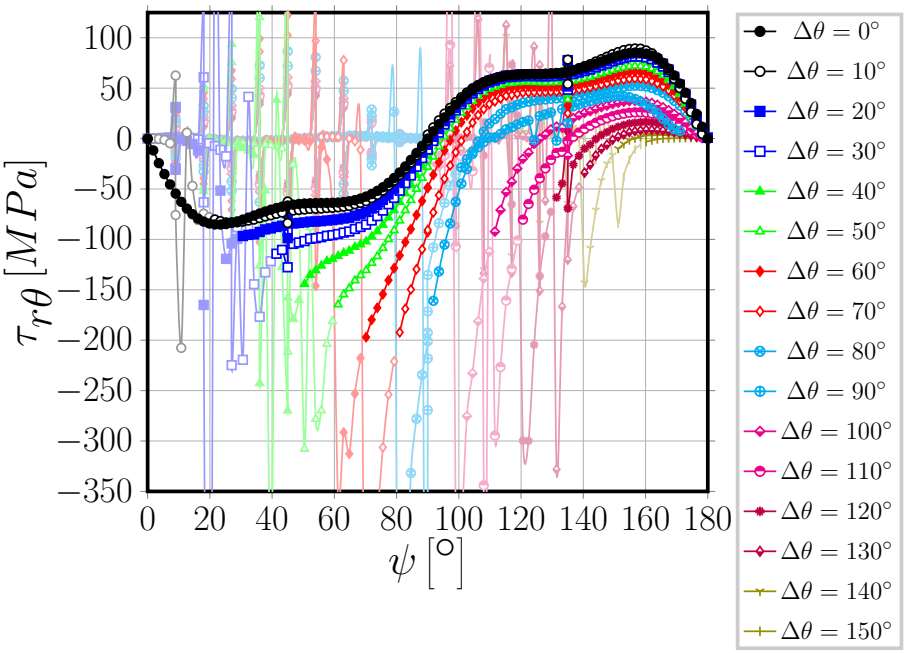

Figure 12: $\tau_{r\theta}$, $11 \times 1 - symm.$ $V_f = 60\%$, $\varepsilon_x = 1\%$.

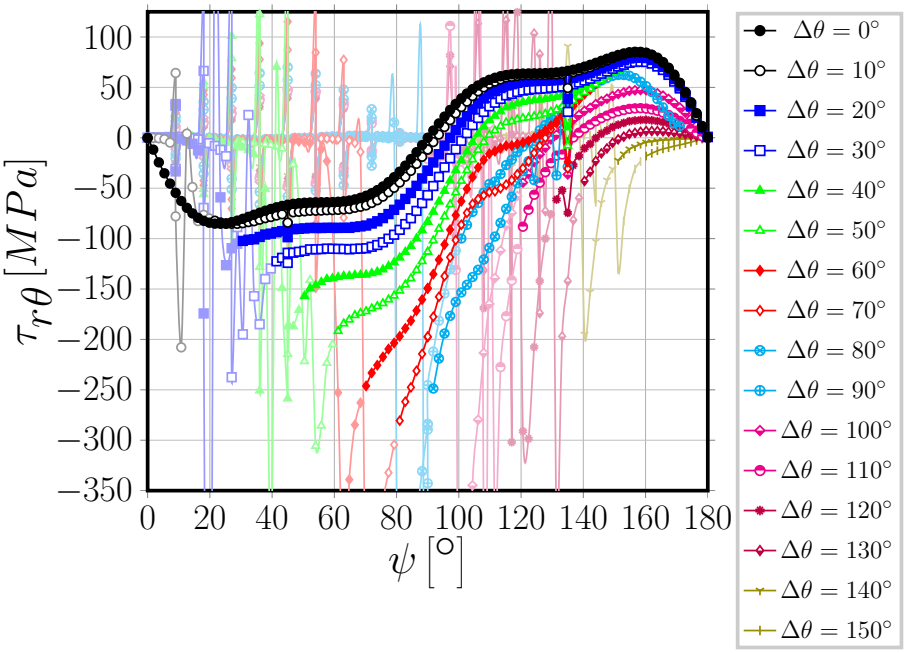

Figure 13: $\tau_{r\theta}$, $11 \times 1 - asymm.$ $V_f = 60\%$, $\varepsilon_x = 1\%$.