Supplementary Information for Unbiased construction of constitutive relations for soft materials from experiments via Rheology-Informed Neural Networks

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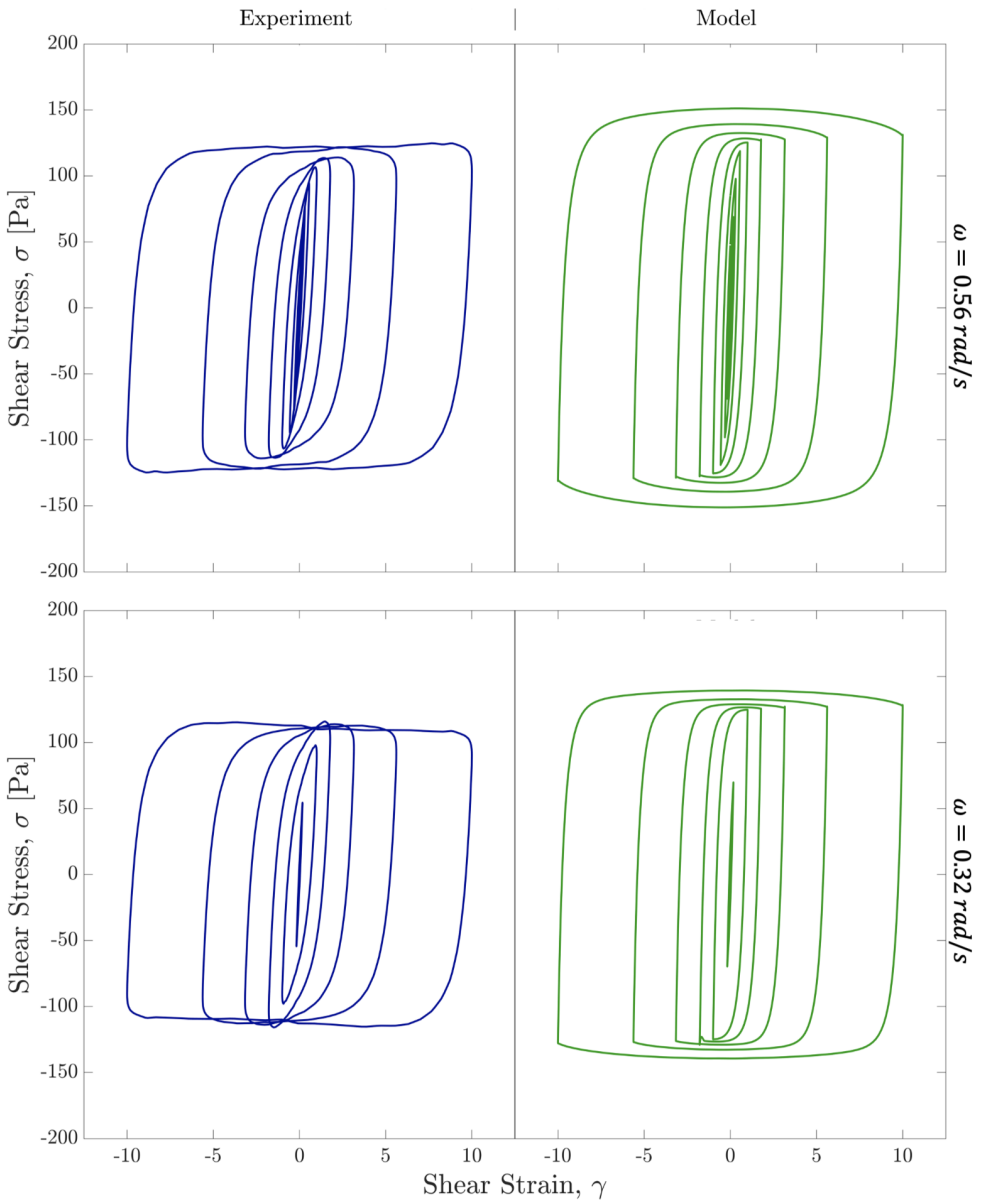

Figure 1: SAOS to LAOS stress response of the elasto-visco-plastic fluid benchmarked against the prediction of recovered/constructed constitutive model at the frequencies of 0.56 and 0.32 rad/s for the applied shear strain of 0.0056 to 10.0 [-].

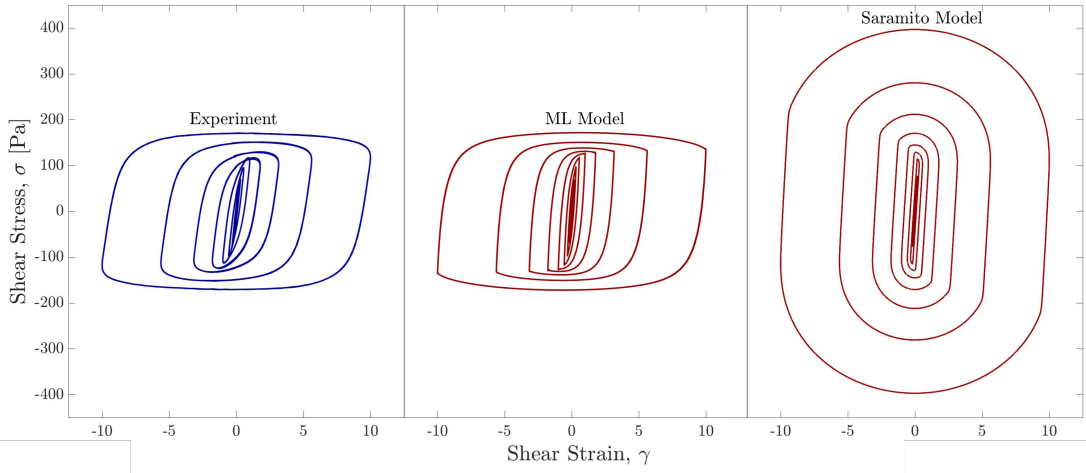

Figure 2: SAOS to LAOS stress response of the elasto-visco-plastic fluid benchmarked against the prediction of recovered/constructed constitutive model for the applied shear strain amplitudes of 0.0056 to 10.0 [-]: (left) Experimentally measured responses, (middle) New constructed model responses, (right) Best fits to classical elasto-visco-plastic constitutive model of Saramito.

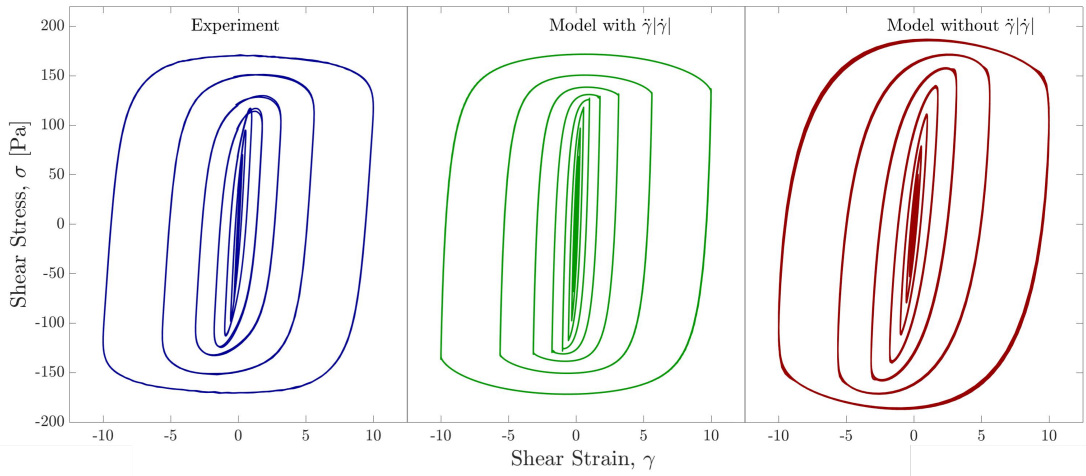

Figure 3: SAOS to LAOS stress response of the Carbopol: (left) Experimentally measured, (middle) Predicted by the model including all terms presented in the manuscript, and (right) Predicted by the model with all model parameters except the product of first and second derivative of the strain.