Modeling the rheological response of lunar regolith NaOH solution pastes

We provide here the predictions of the Ioannou-Stephanou model [1] as parametrized using the rheological data of Li et al. [2].

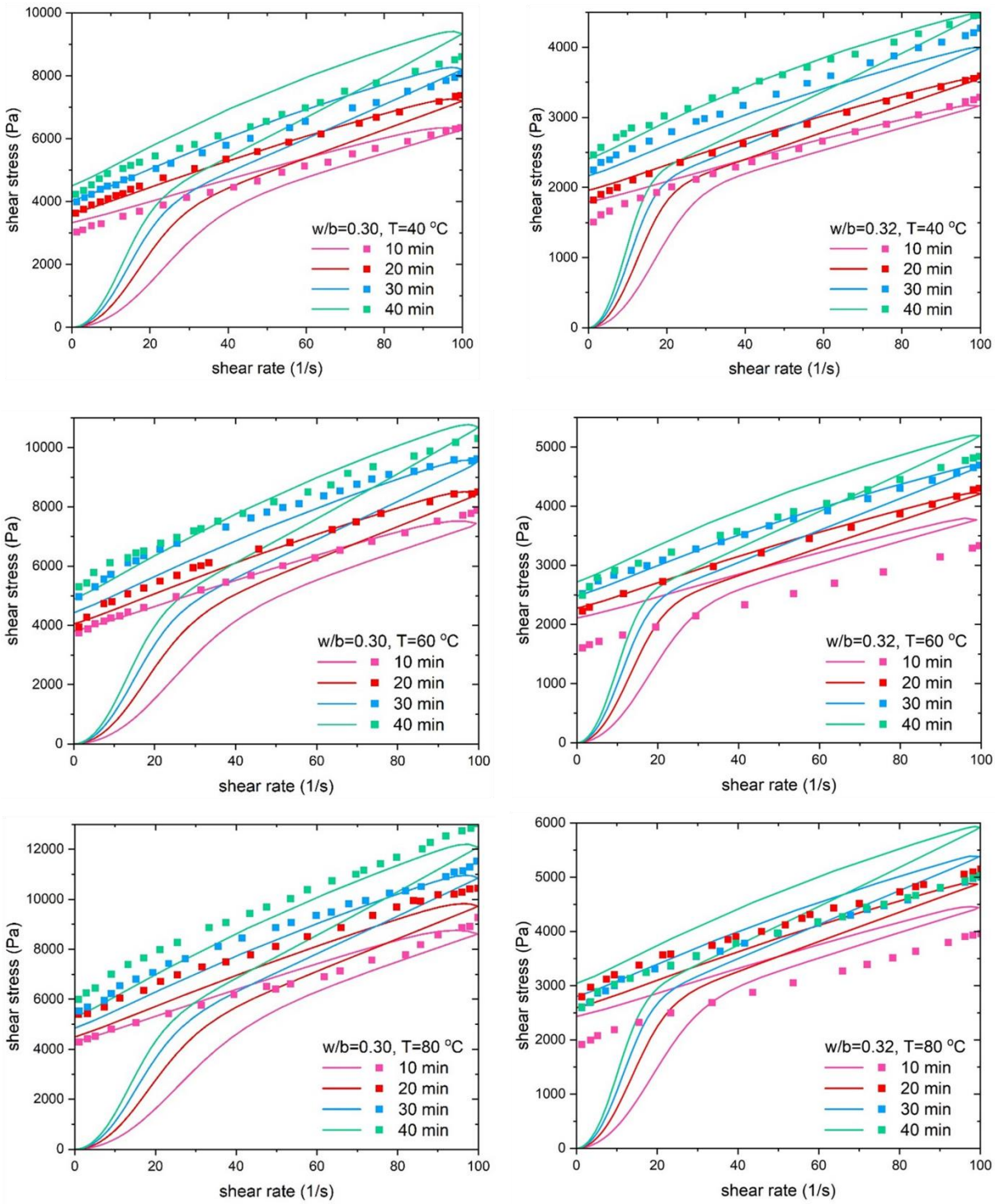

Fig. 1: Comparison with the rheological data of shear stress versus shear rate of Li et al. [2] in geopolymer cement pastes based on lunar regolith simulant for w/b=0.30 and 0.32 and temperatures 40-80 °C.

References

[1] A. K. Ioannou, ; Pavlos, S. Stephanou, and P. S. Stephanou, “Nonequilibrium thermodynamics modeling of the rheological response of cement pastes,” J. Rheol., **67**, 849–849, (2023),

[2] F. Li, R. Zhang, S. Zhou, and X. Zhu, “Printability and hardening performance of three-dimensionally-printed geopolymer based on lunar regolith simulant for automated construction of lunar infrastructure,” Front. Struct. Civ. Eng., **17**, 1535–1553, (2023),