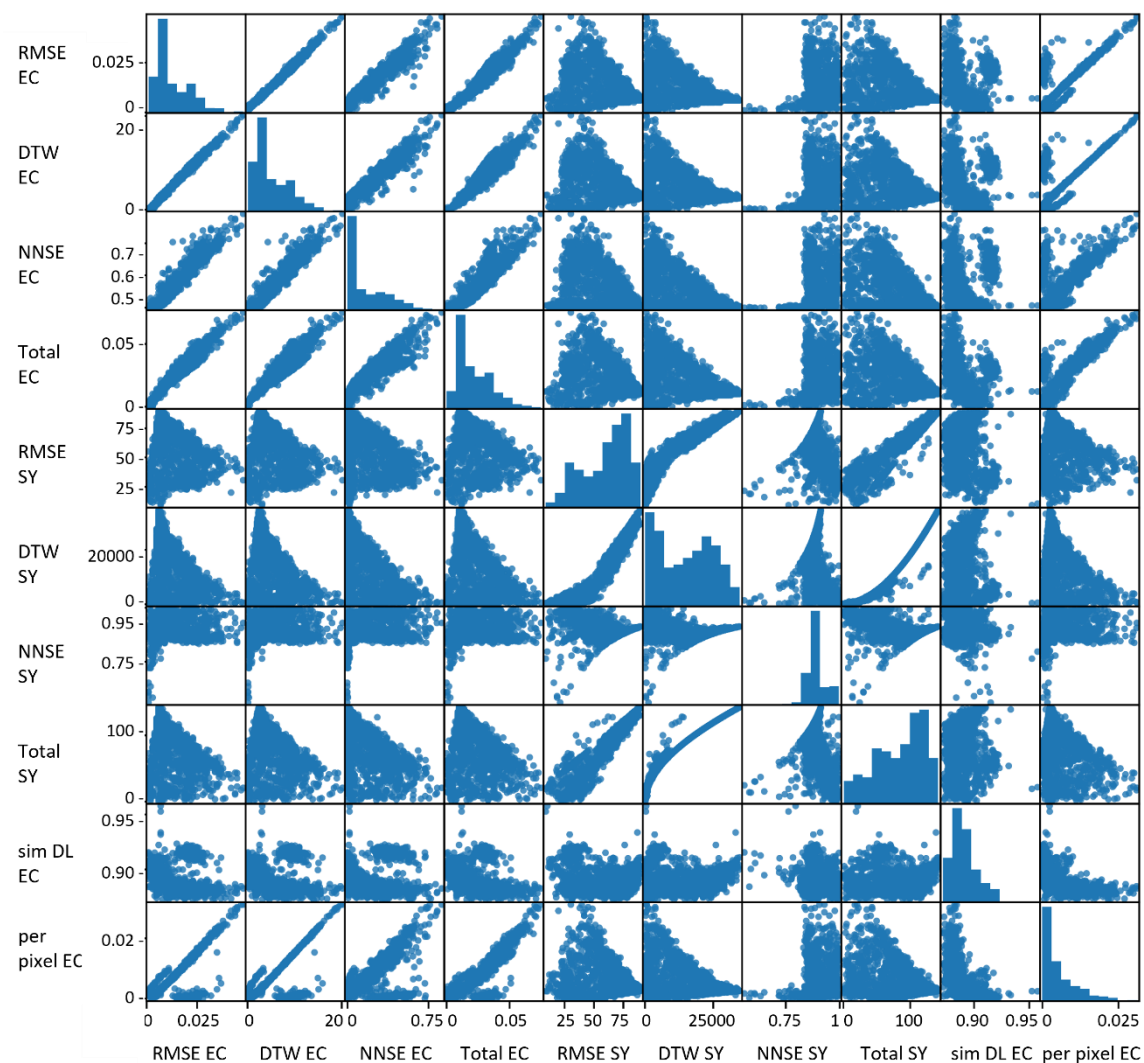
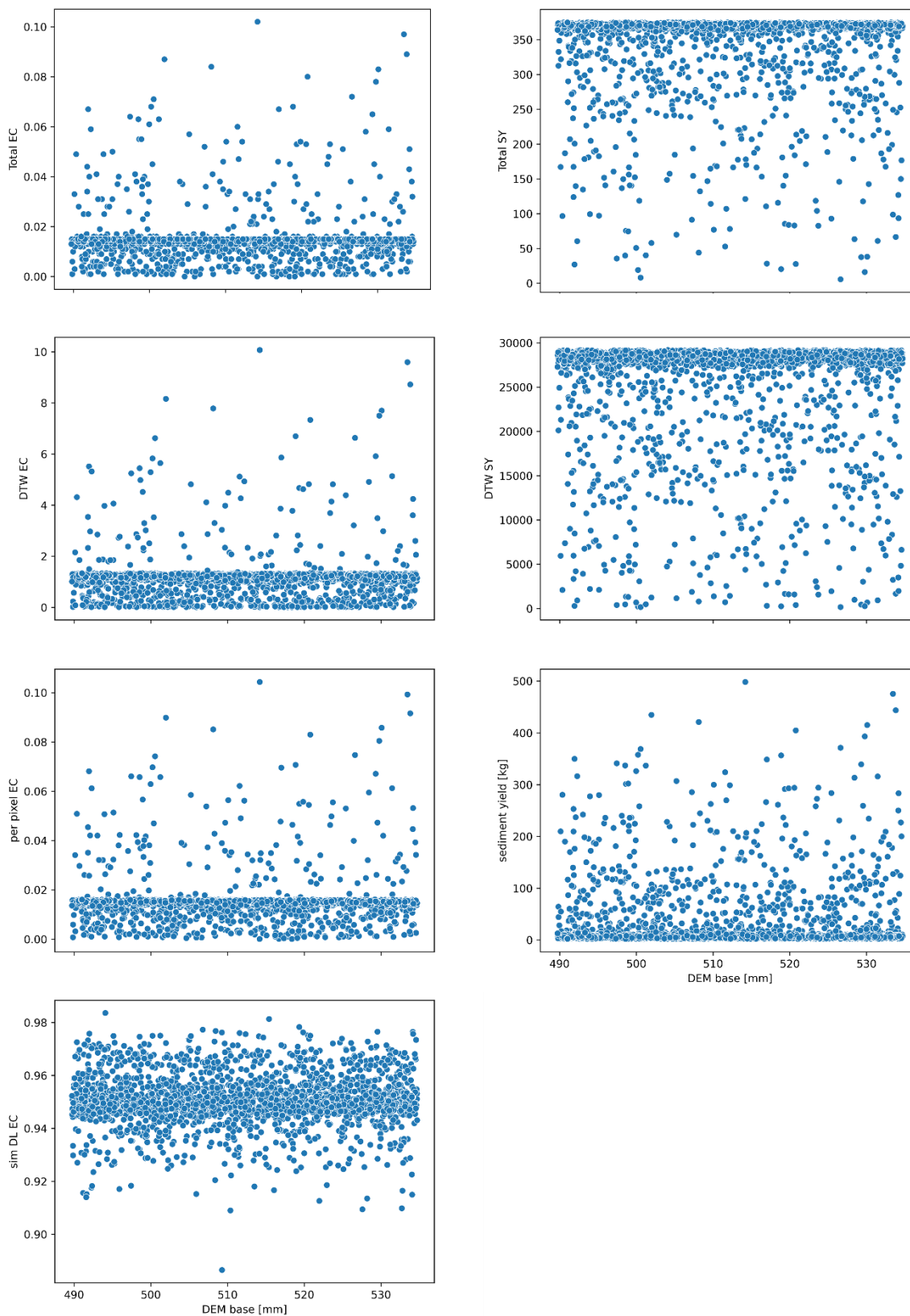


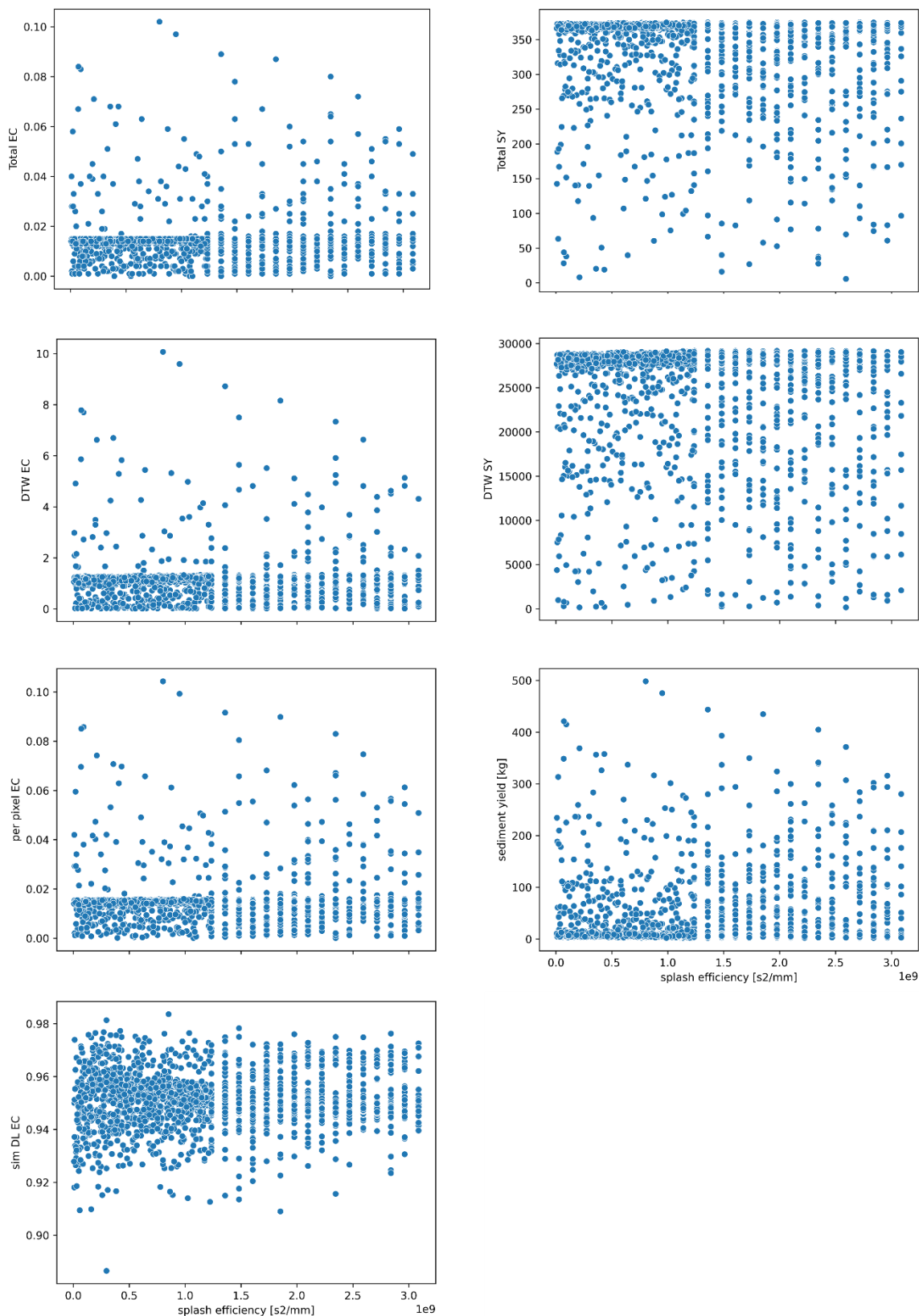
Supplement 3-1: Scatter matrix of metrics according to different objective functions for the field experiment before filtering for unplausible models (EC in m, except sim DL that has no unit; SY in kg).



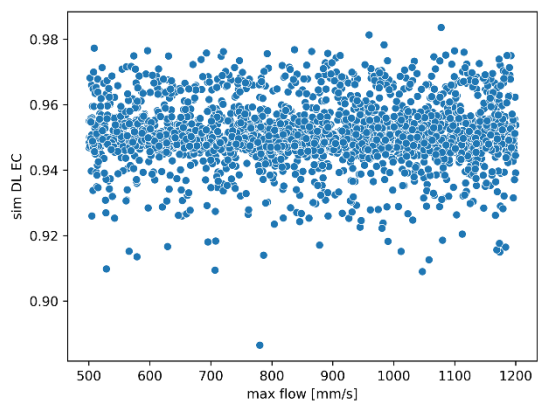
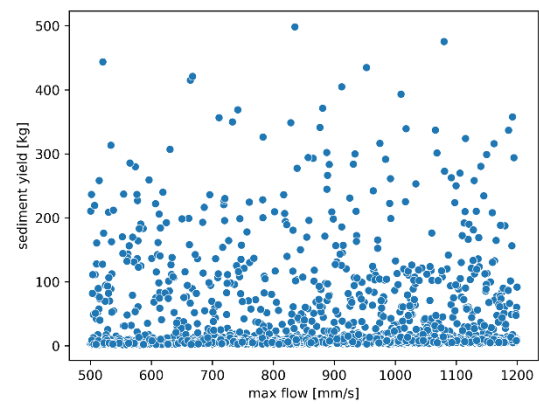
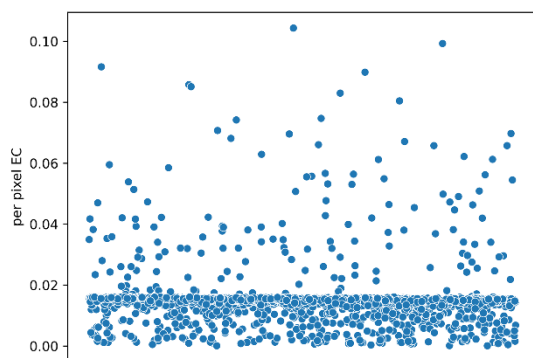
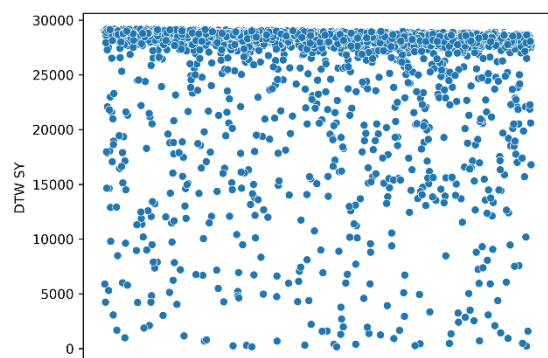
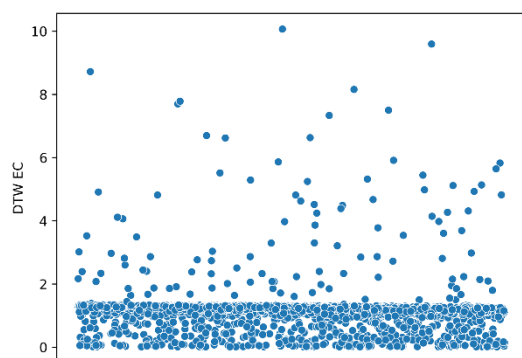
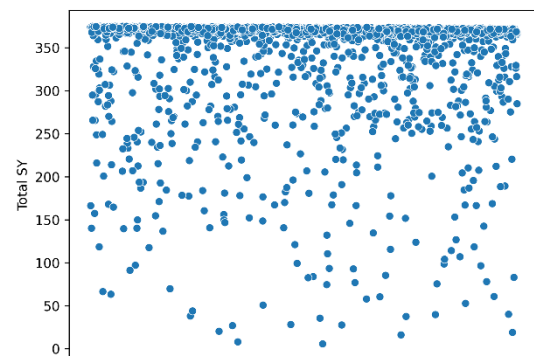
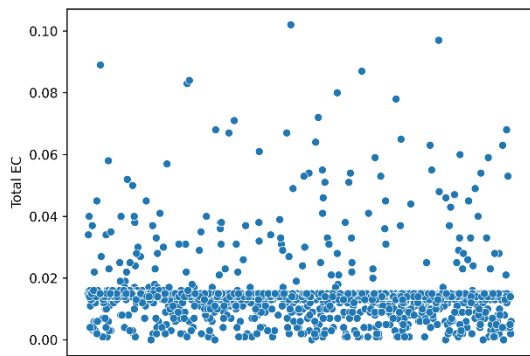
Supplement 3-2: Scatter plot for the field experiment for the model parameter DEM base level and different metrics of the objective functions.



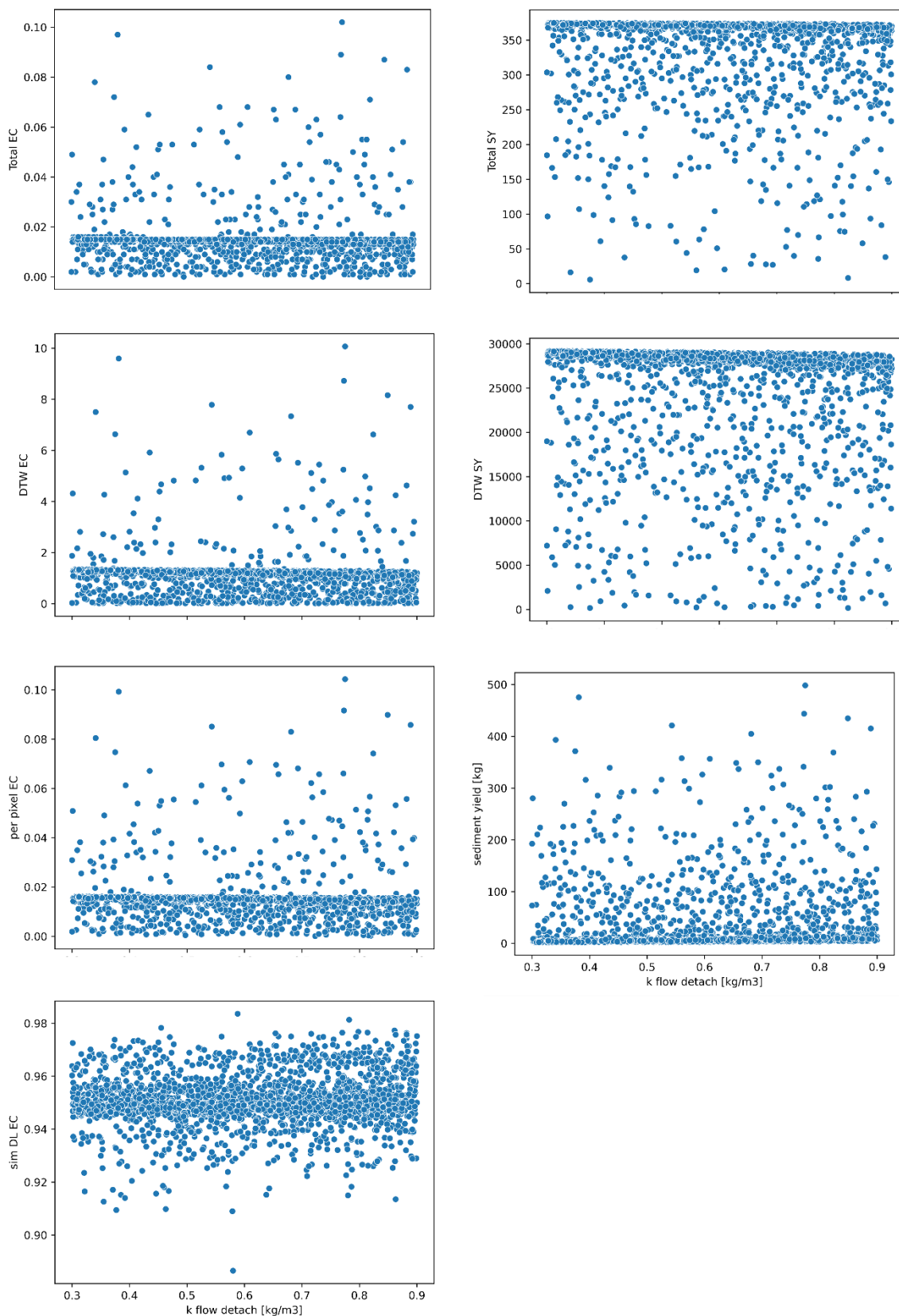
Supplement 3-3: Scatter plot for the field experiment for the model parameter splash efficiency and different metrics of the objective functions.



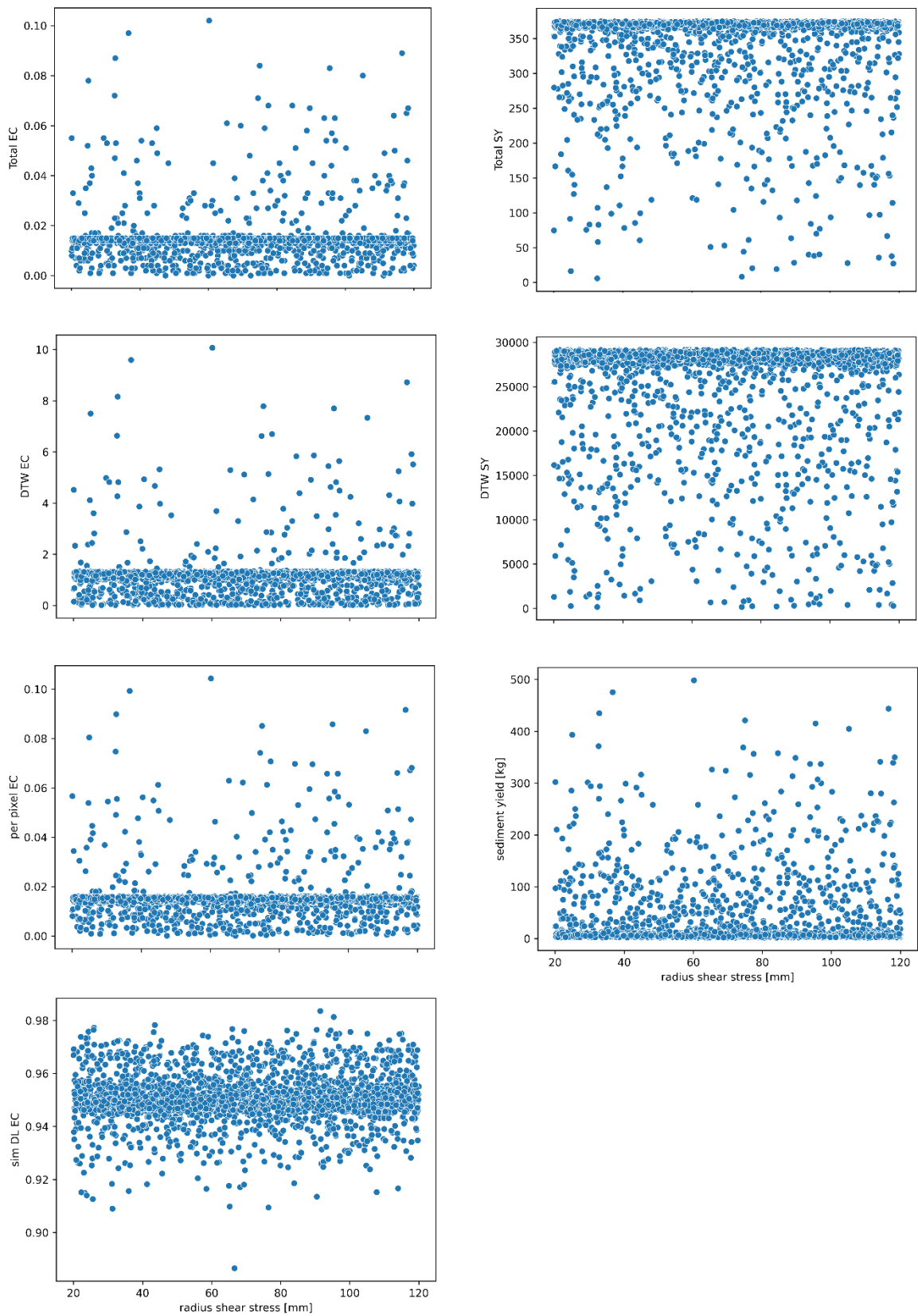
Supplement 3-4: Scatter plot for the field experiment for the model parameter maximum flow velocity and different metrics of the objective functions.



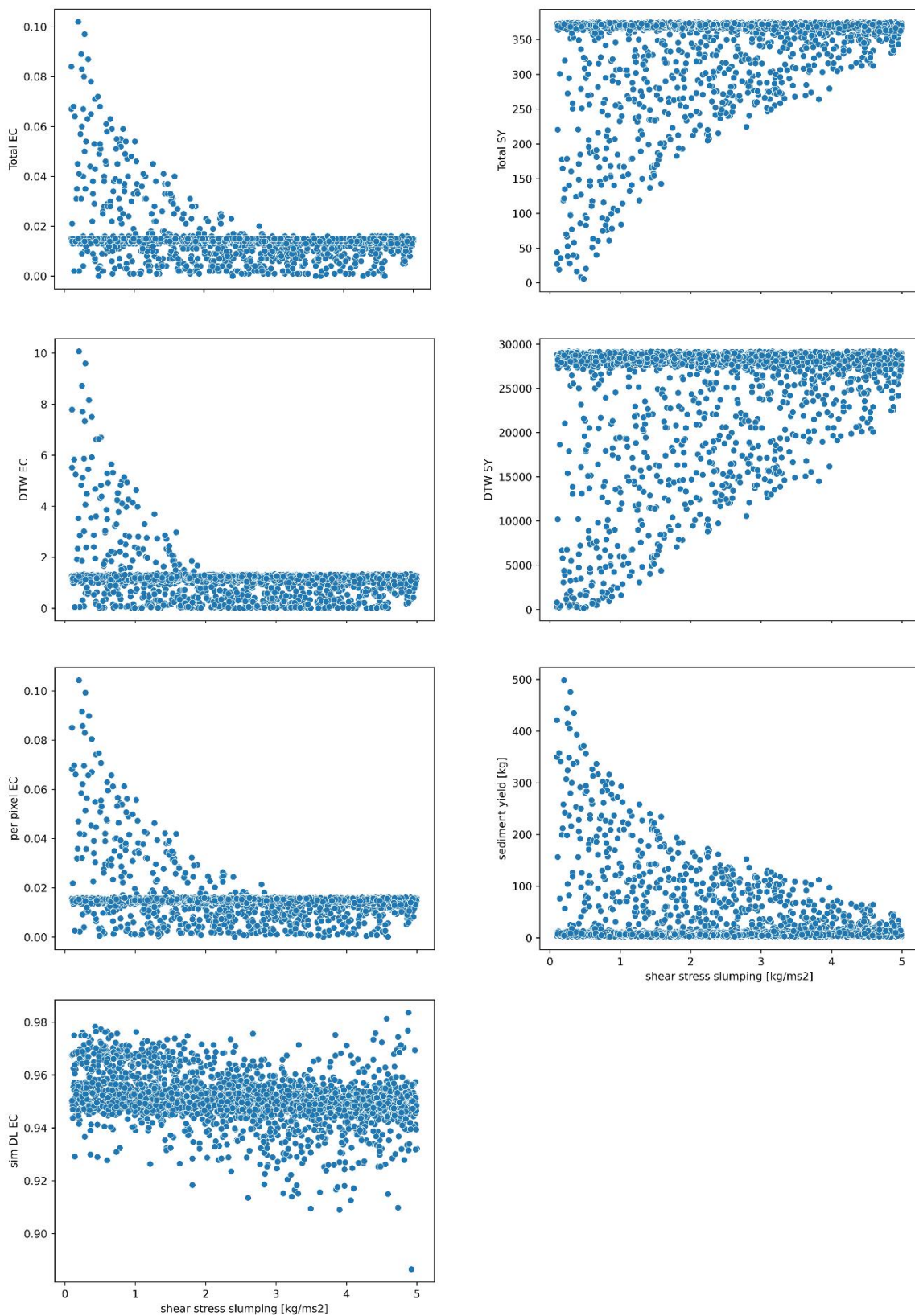
Supplement 3-5: Scatter plot for the field experiment for the model parameter flow detachment and different metrics of the objective functions.



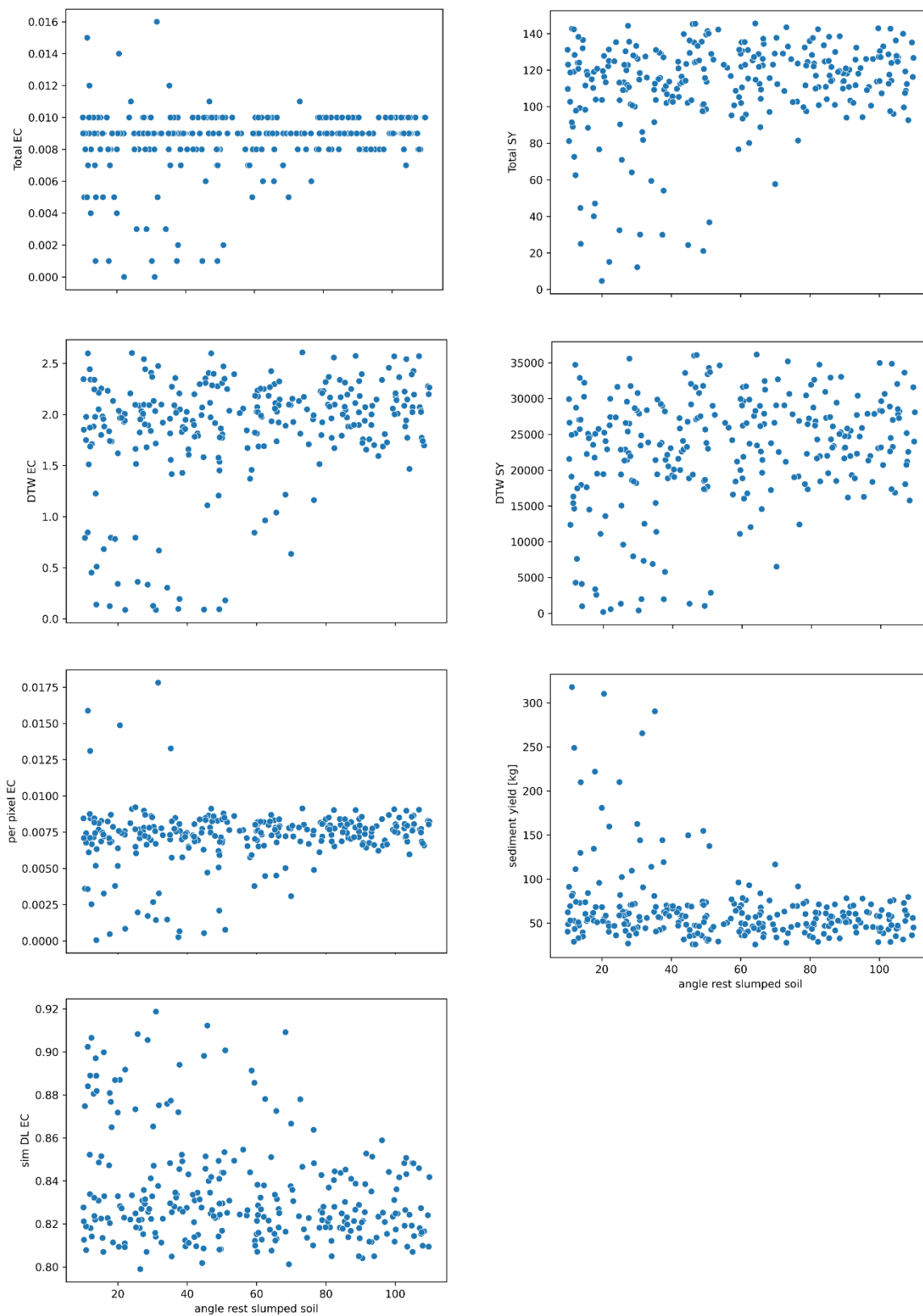
Supplement 3-6: Scatter plot for the field experiment for the model parameter radius of soil shear stress and different metrics of the objective functions.



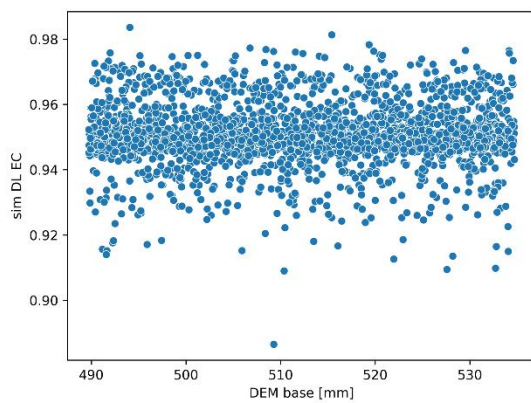
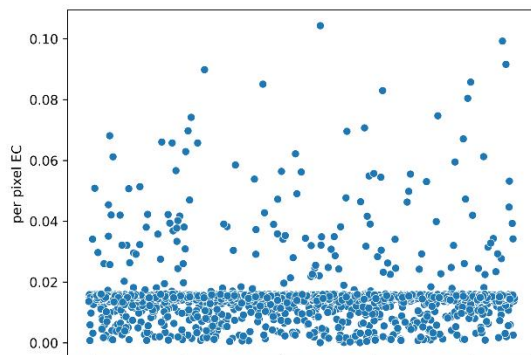
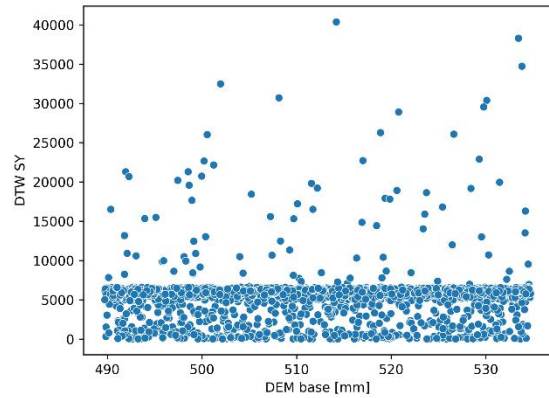
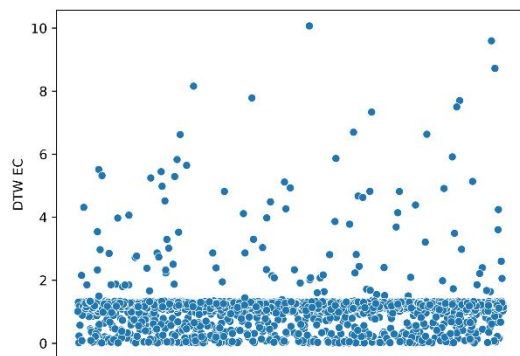
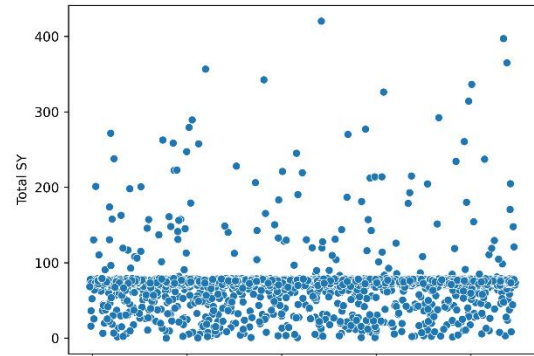
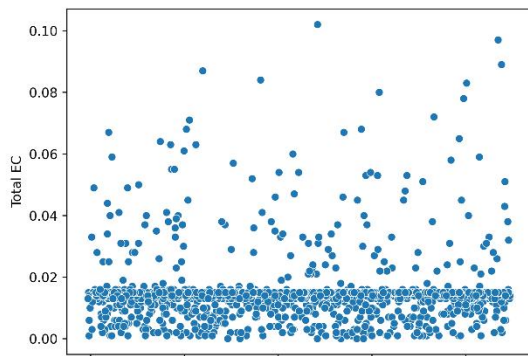
Supplement 3-7: Scatter plot for the field experiment for the model parameter threshold shear stress for slumping and different metrics of the objective functions.



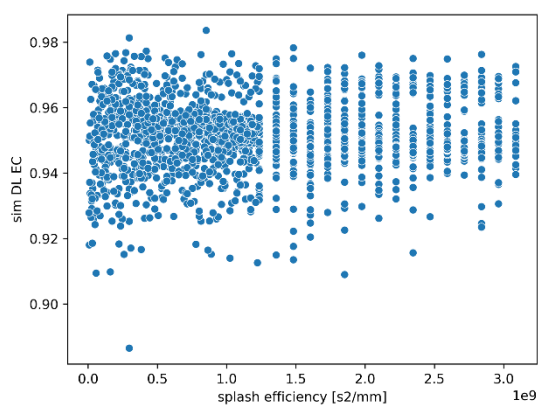
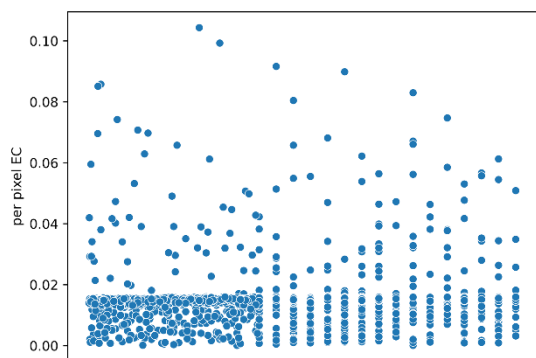
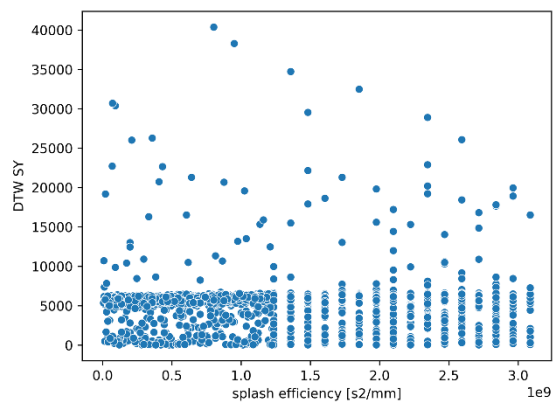
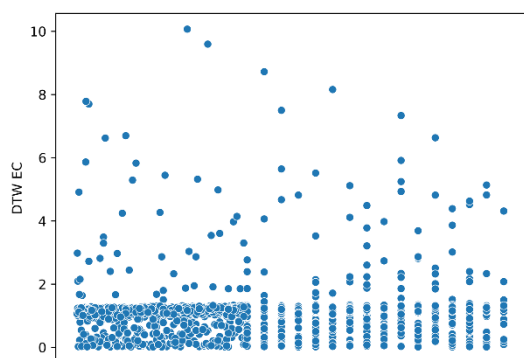
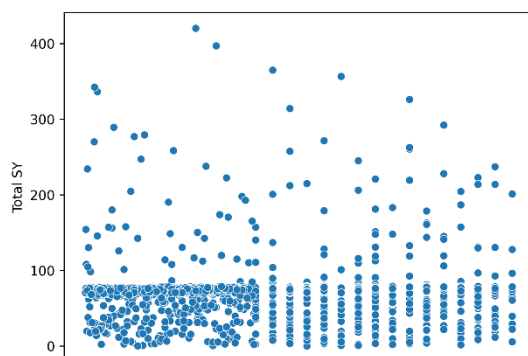
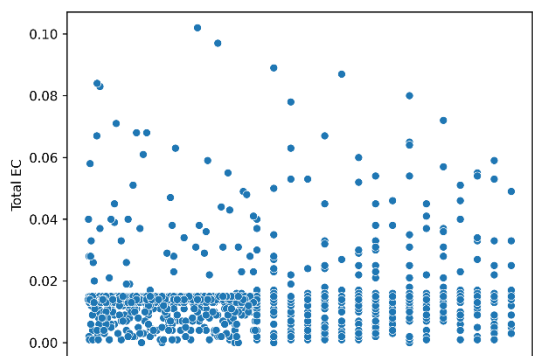
Supplement 3-8: Scatter plot for the field experiment for the model parameter angle of rest for slumped soil and different metrics of the objective functions.



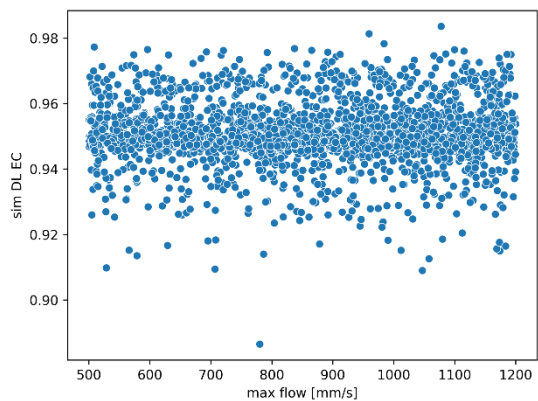
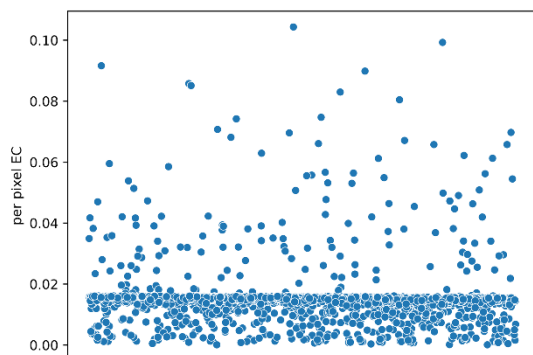
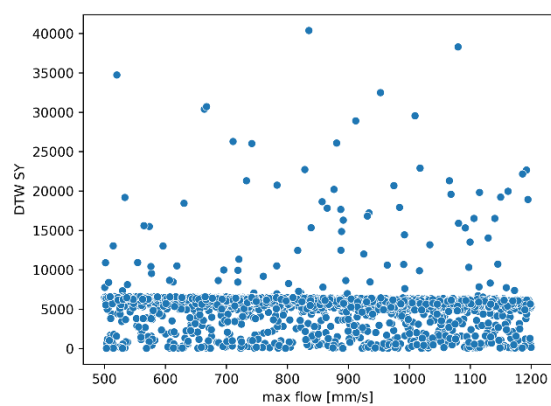
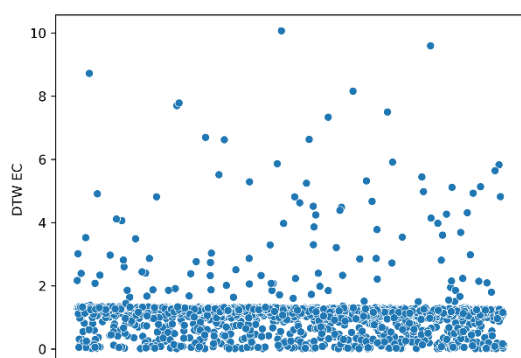
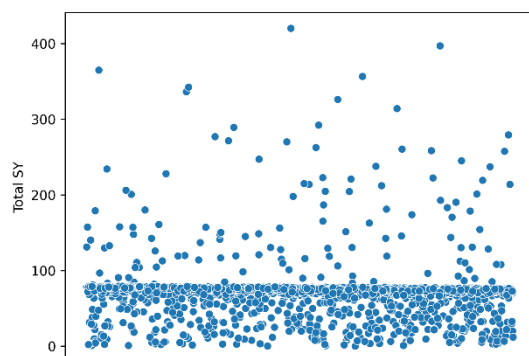
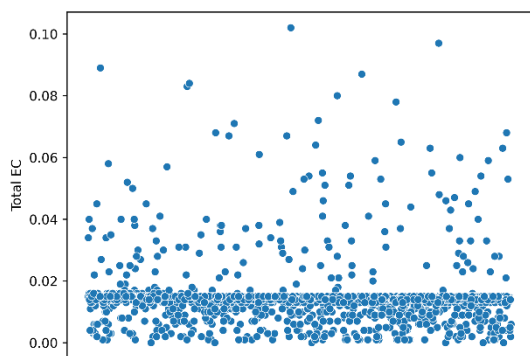
Supplement 3-9: Scatter plot for the laboratory experiment for the model parameter DEM base level and different metrics of the objective functions.



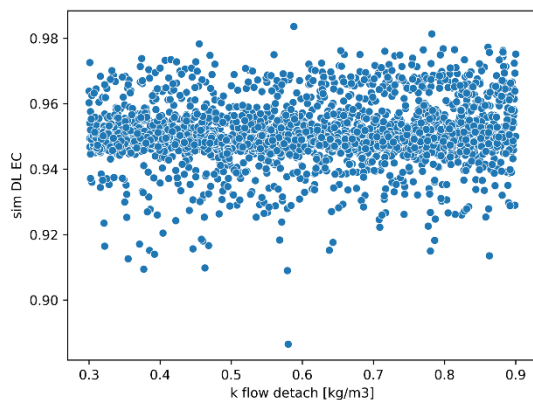
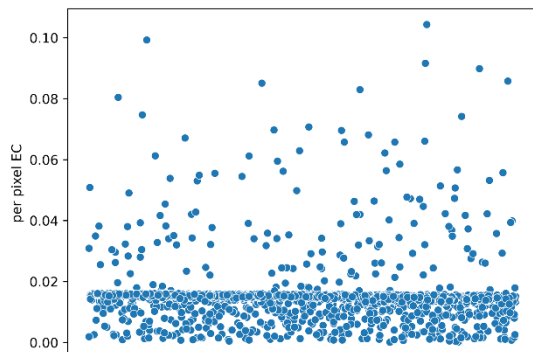
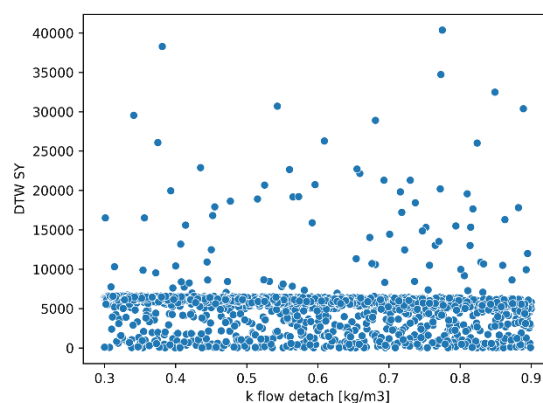
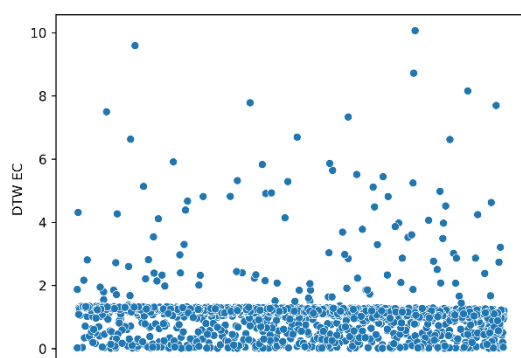
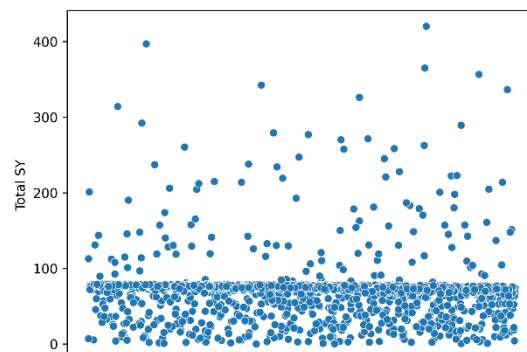
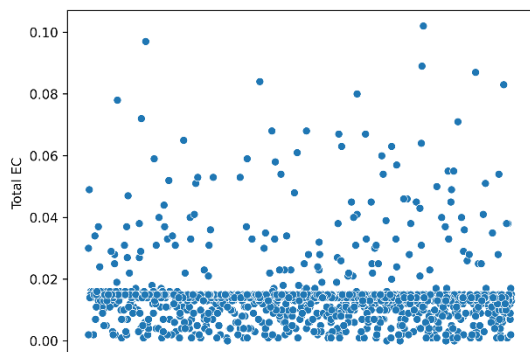
Supplement 3-10: Scatter plot for the laboratory experiment for the model parameter splash efficiency and different metrics of the objective functions.



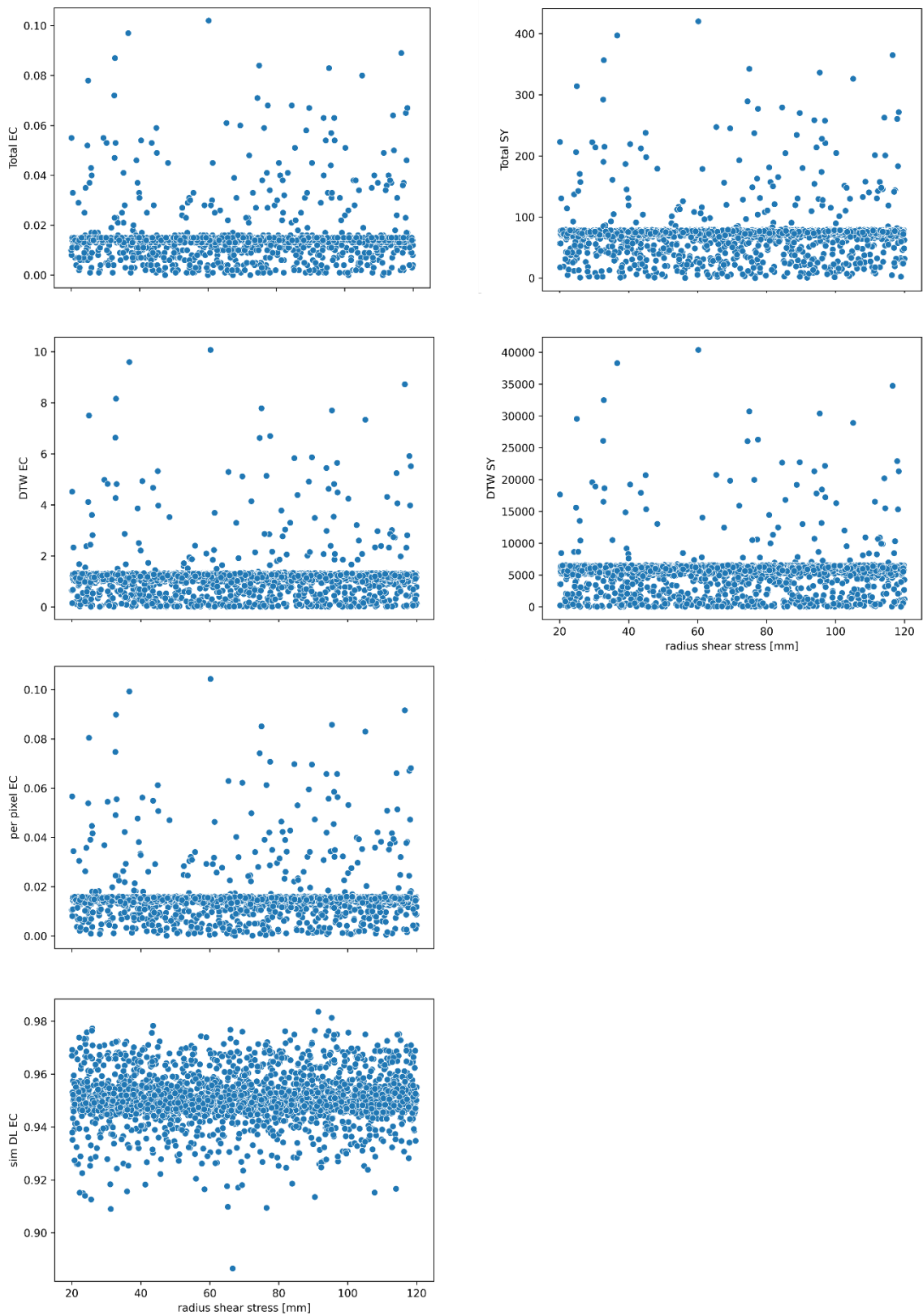
Supplement 3-11: Scatter plot for the laboratory experiment for the model parameter maximum flow velocity and different metrics of the objective functions.



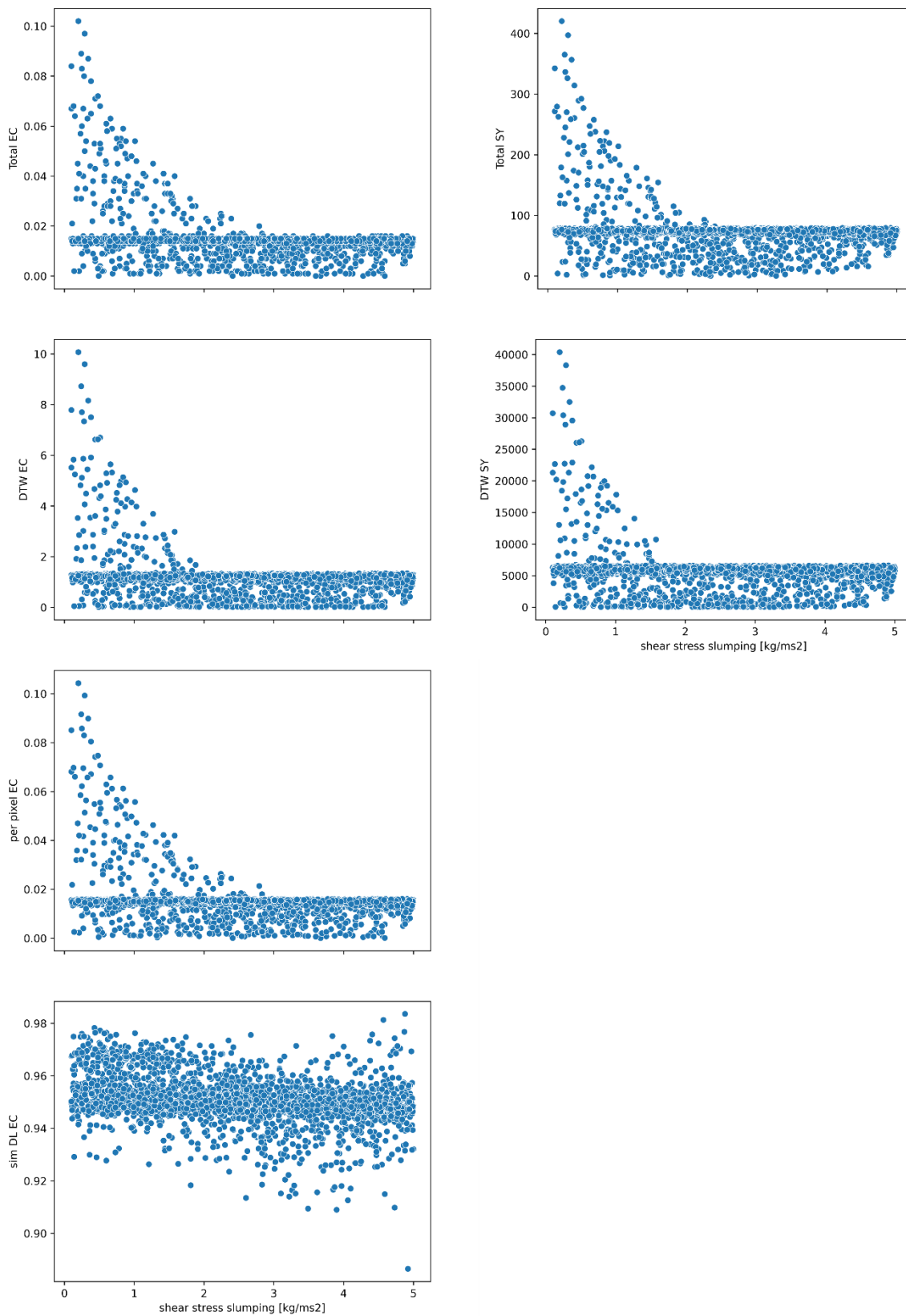
Supplement 3-12: Scatter plot for the laboratory experiment for the model parameter flow detachment and different metrics of the objective functions.



Supplement 3-13: Scatter plot for the laboratory experiment for the model parameter radius of soil shear stress and different metrics of the objective functions.



Supplement 3-14: Scatter plot for the laboratory experiment for the model parameter threshold shear stress for slumping and different metrics of the objective functions.



Supplement 3-15: Scatter plot for the laboratory experiment for the model parameter angle of rest for slumped soil and different metrices of the objective functions.

