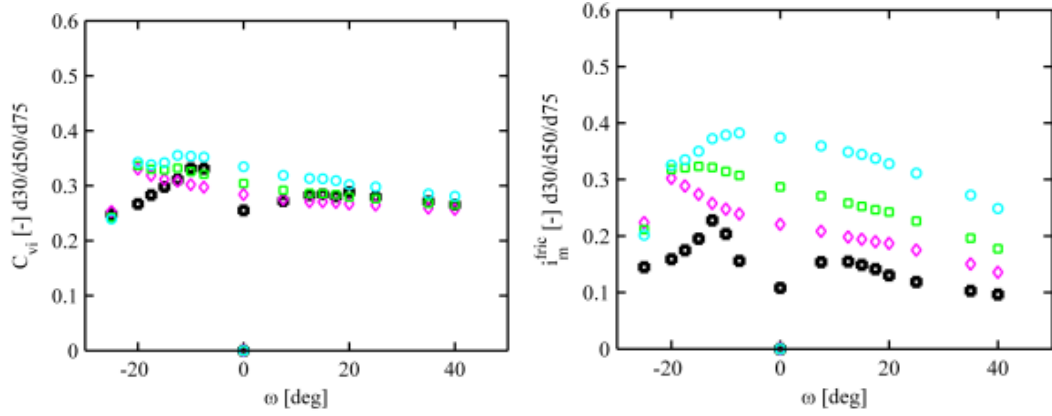


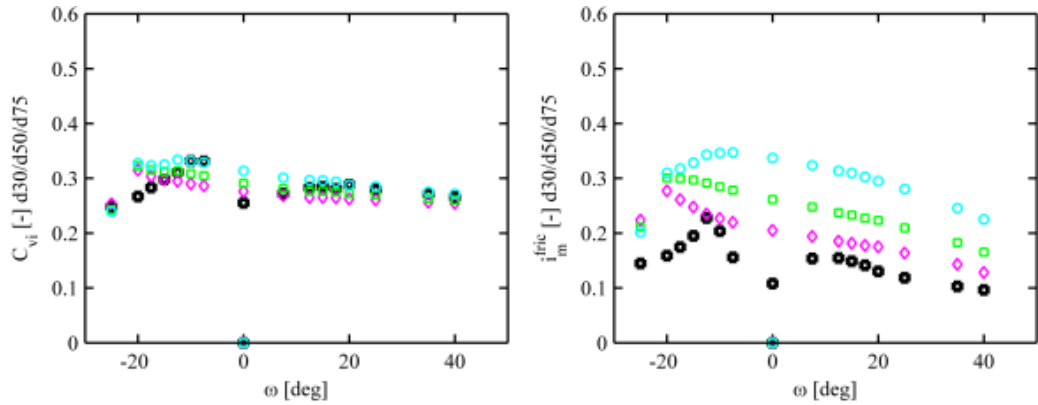
Appendix

Two-layer model results for the broadly graded slurry flow.

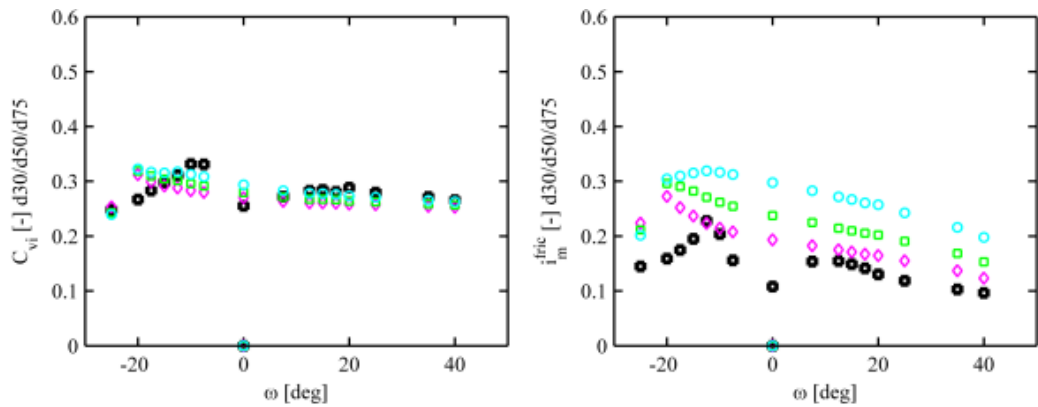
FricEq (2):



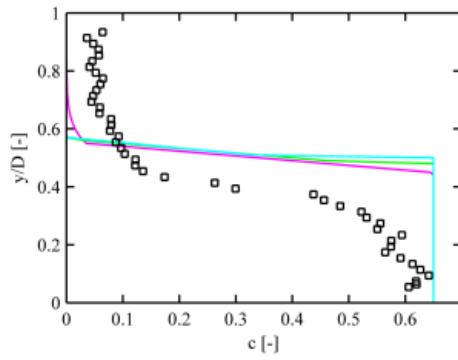
FricEq (6):



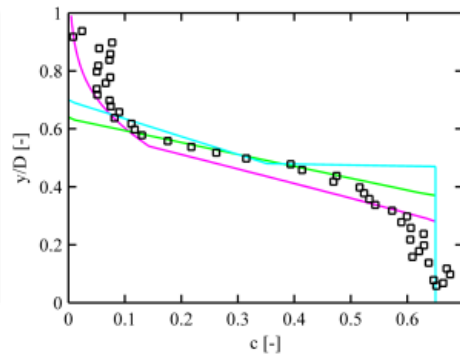
FricEq (9):



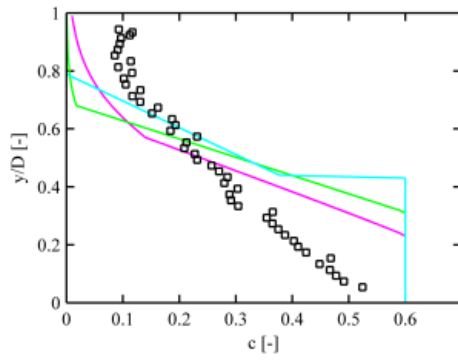
Results for different friction gradients and spatial volumetric concentrations, of sand-water flow, at $V_m \approx 2.5$ m/s and $C_{vd} \approx 0.24$, at different inclination angles, with $transpEq = 1$, $Cmode = 1$, $fricEq = 2-6-9$; Legend: black-square Measured frictional hydraulic gradient/ C_{vi} ; green-square: d50; magenta-diamond: d30; cyan-circle: d75.



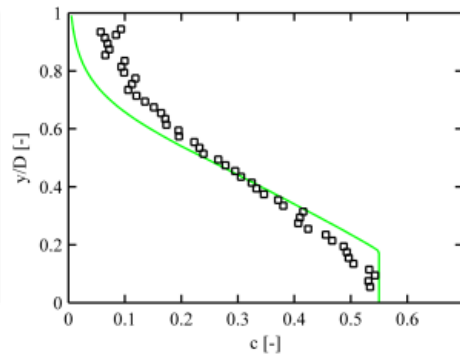
Inc. -20



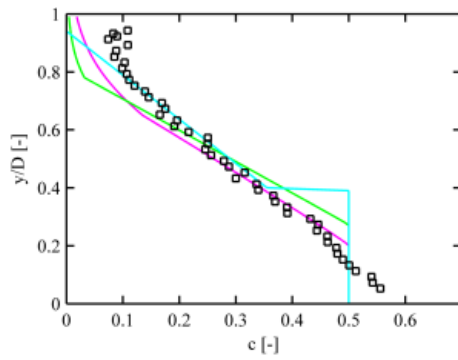
Inc -10



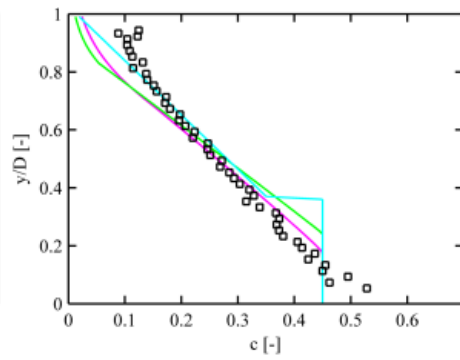
Inc. 0



Inc 10

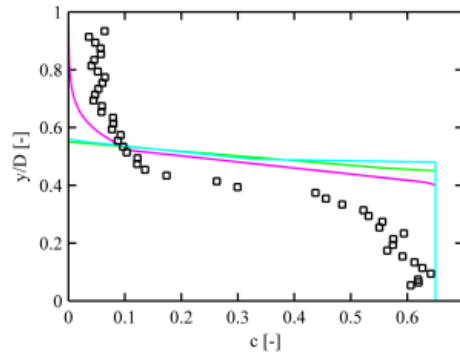


Inc. 20

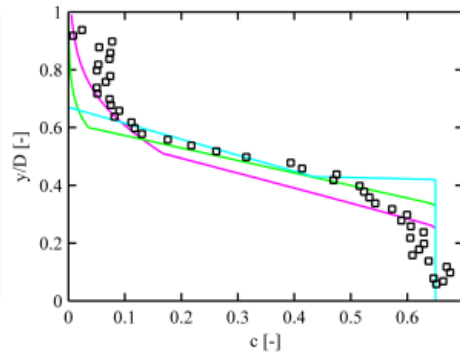


Inc 35

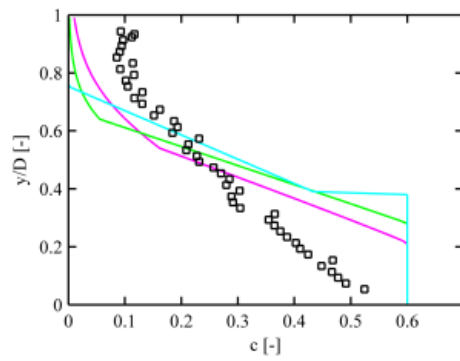
Solids concentration profile of sand-water flow at $V_m \approx 2.5$ m/s and $C_{vd} \approx 0.24$ at different inclination angles, with $transpEq = 1$, $Cmode = 1$, $fricEq = 2$; Legend: black-square: measured concentration profile; green-square: d50; magenta-diamond: d30; cyan-circle: d75.



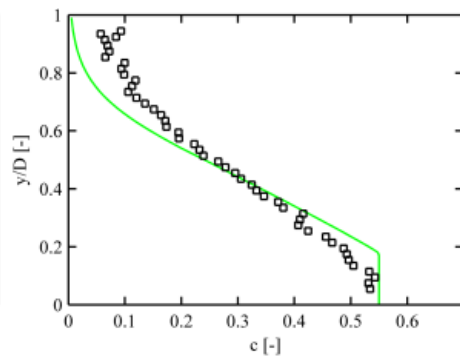
Inc. -20



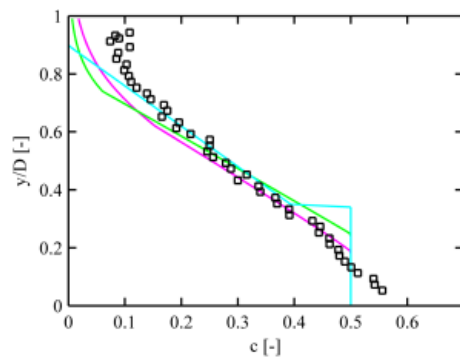
Inc -10



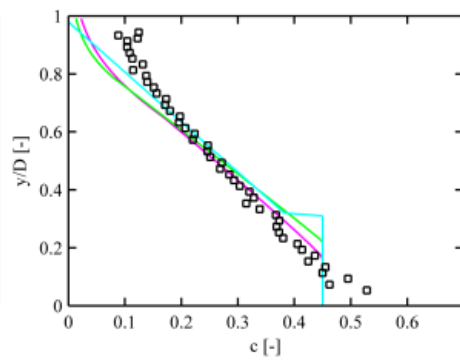
Inc. 0



Inc 10

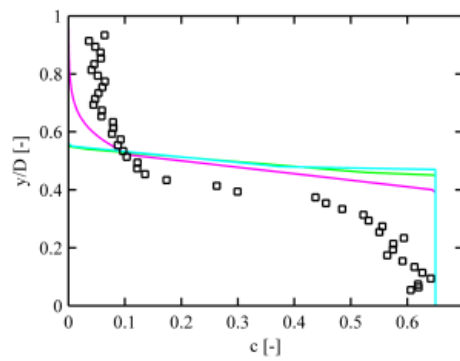


Inc. 20

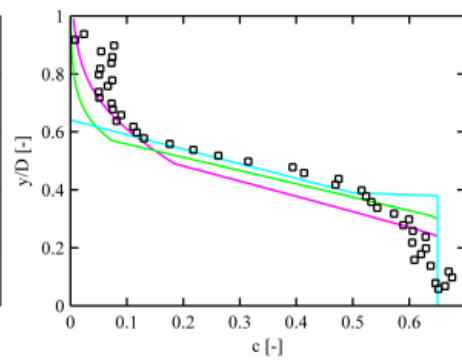


Inc 35

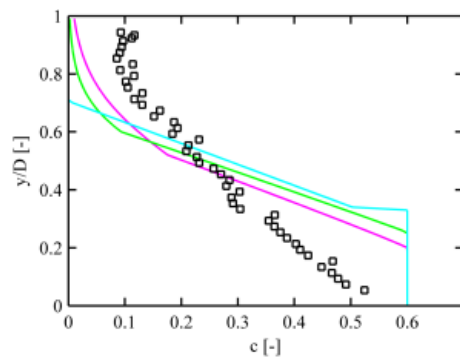
Solids concentration profile of sand-water flow at $V_m \approx 2.5$ m/s and $C_{vd} \approx 0.24$ at different inclination angles, with $transpEq = 1$, $Cmode = 1$, $fricEq = 6$; Legend: black-square: measured concentration profile; green-square: d50; magenta-diamond: d30; cyan-circle: d75.



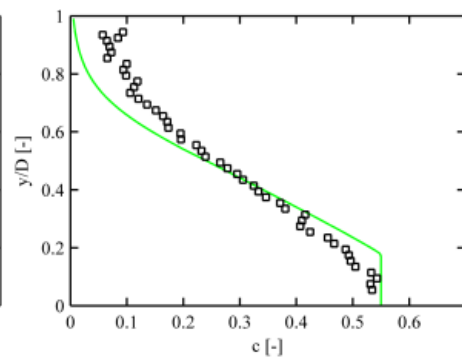
Inc. -20



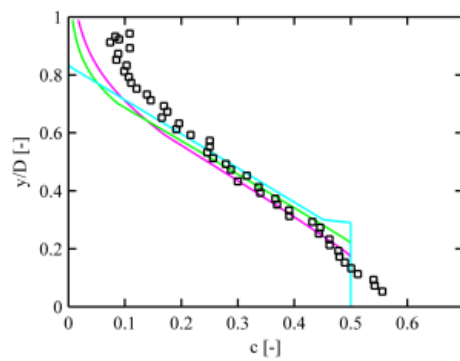
Inc -10



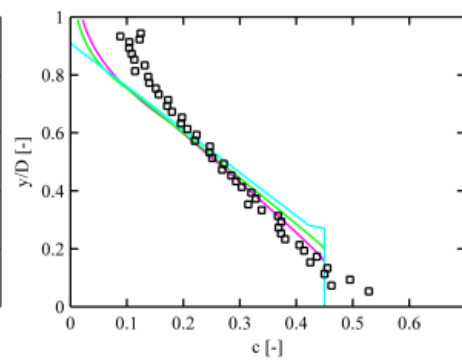
Inc. 0



Inc 10



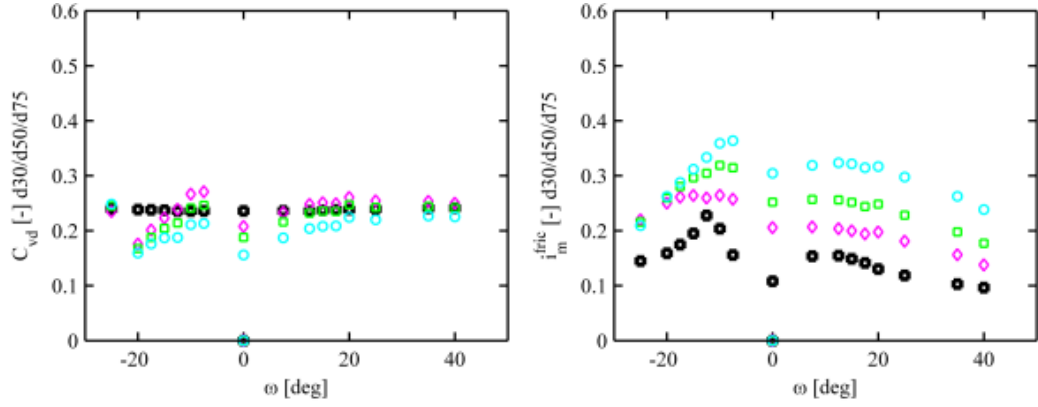
Inc. 20



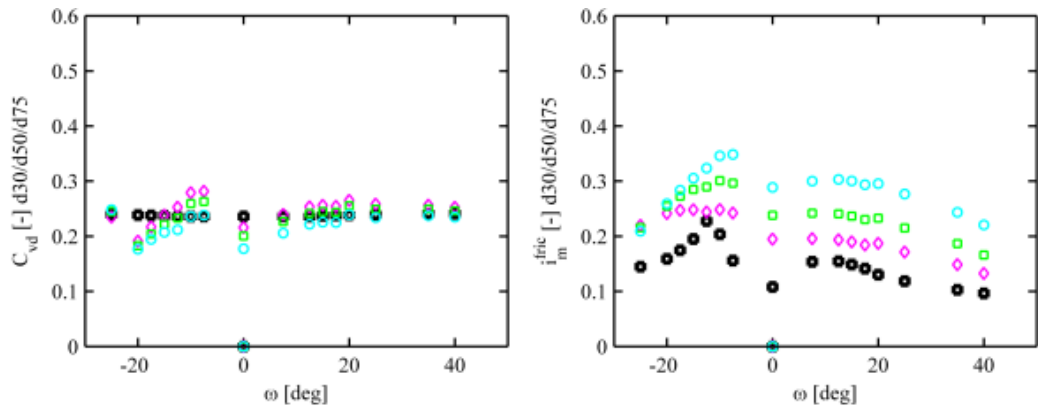
Inc 35

Solids concentration profile of sand-water flow at $V_m \approx 2.5$ m/s and $C_{vd} \approx 0.24$ at different inclination angles, with $transpEq = 1$, $Cmode = 1$, $fricEq = 9$; Legend: black-square: measured concentration profile; green-square: d50; magenta-diamond: d30; cyan-circle: d75.

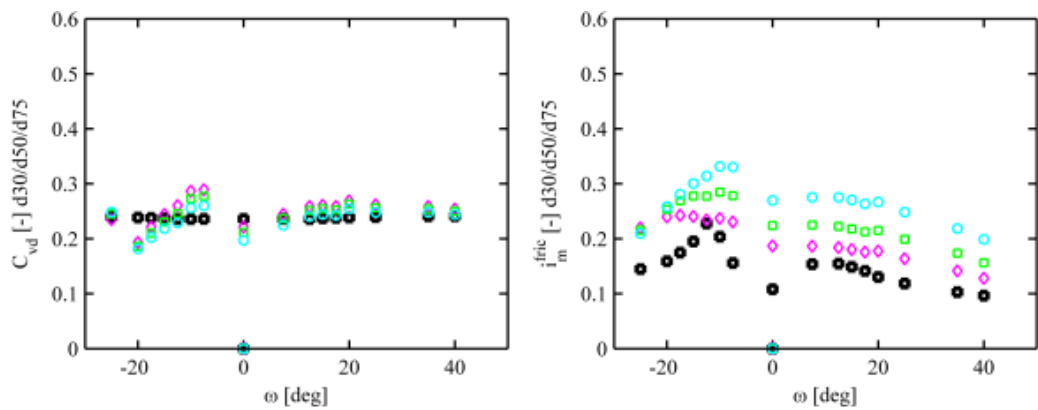
FricEq (2):



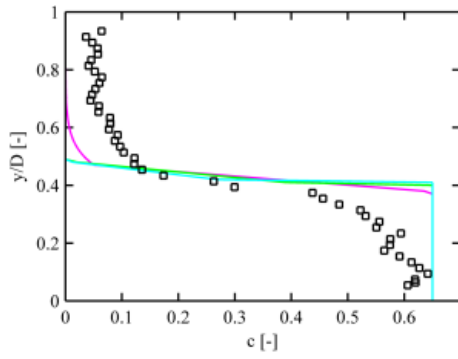
FricEq (6):



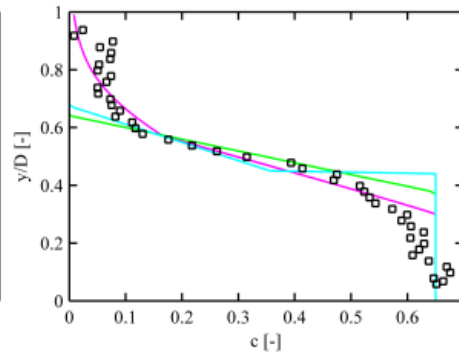
FricEq (9):



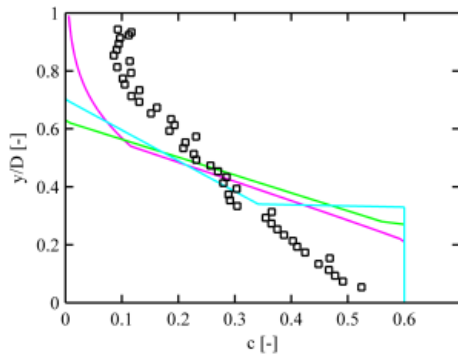
Results for different friction gradients and spatial volumetric concentrations, of sand-water flow, at $V_m \approx 2.5$ m/s and $C_{vd} \approx 0.24$, at different inclination angles, with $transpEq = 1$, $C_{mode} = 2$, $fricEq = 2-6-9$; Legend: black-square Measured frictional hydraulic gradient/ C_{vi} ; green-square: d50; magenta-diamond: d30; cyan-circle: d75.



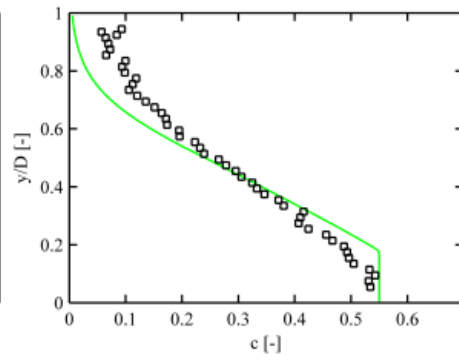
Inc. -20



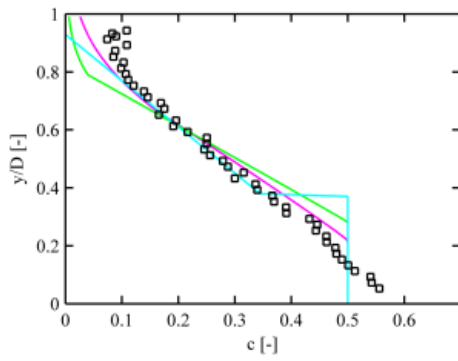
Inc -10



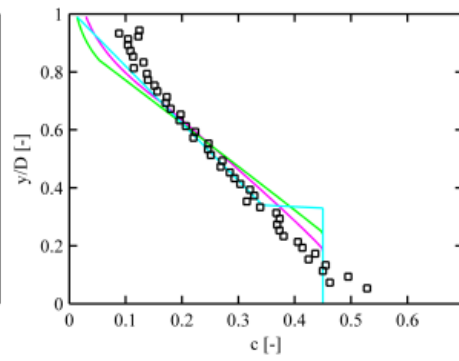
Inc. 0



Inc 10

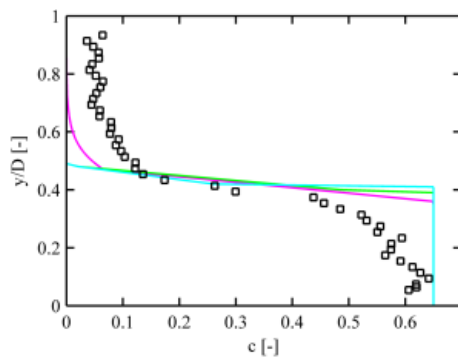


Inc. 20

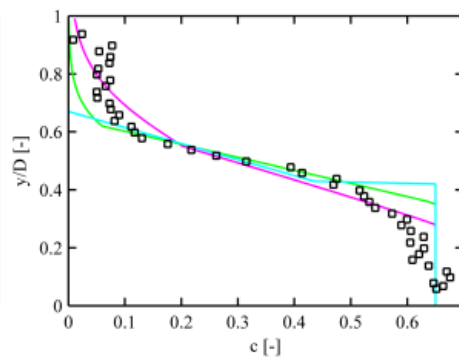


Inc 35

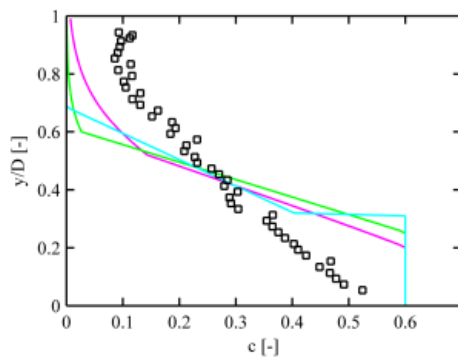
Solids concentration profile of sand-water flow at $V_m \approx 2.5$ m/s and $C_{vd} \approx 0.24$ at different inclination angles, with $transpEq = 1$, $Cmode = 2$, $fricEq 2$; Legend: black-square: measured concentration profile; green-square: d50; magenta-diamond: d30; cyan-circle: d75.



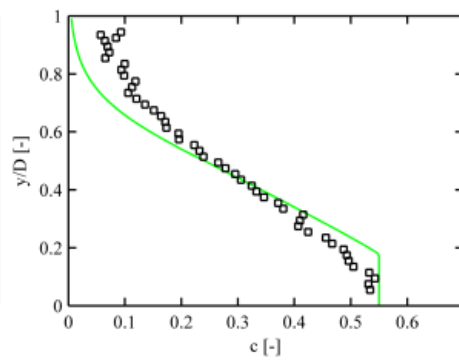
Inc. -20



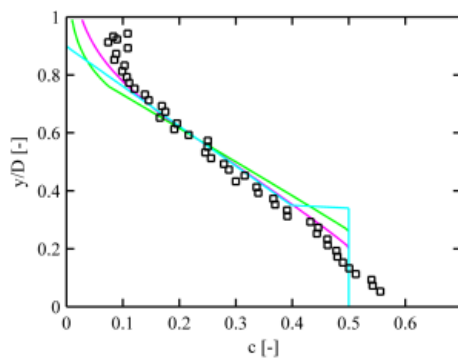
Inc -10



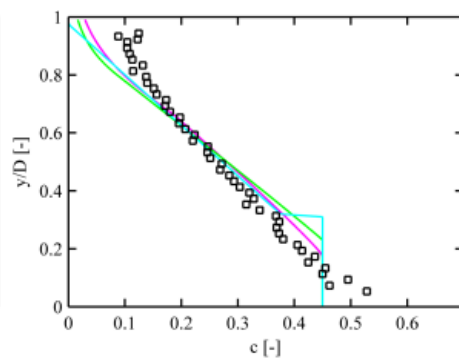
Inc. 0



Inc 10

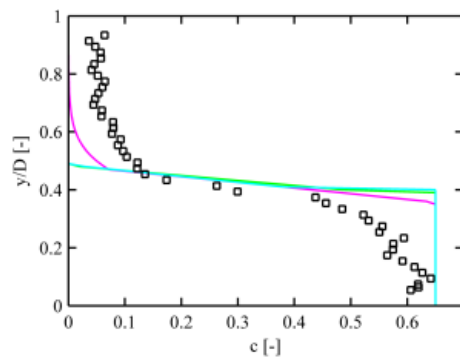


Inc. 20

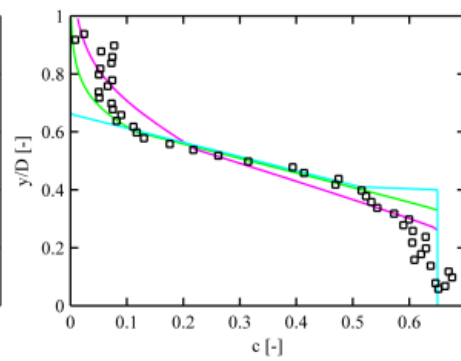


Inc 35

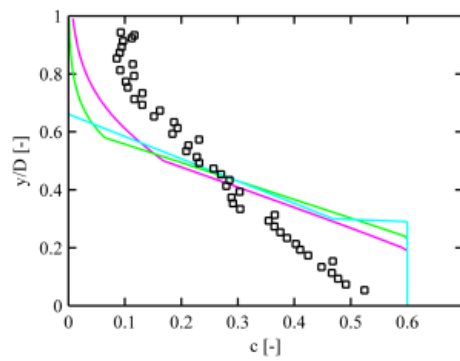
Solids concentration profile of sand-water flow at $V_m \approx 2.5$ m/s and $C_{vd} \approx 0.24$ at different inclination angles, with $transpEq = 1$, $Cmode = 2$, $fricEq = 6$; Legend: black-square: measured concentration profile; green-square: d50; magenta-diamond: d30; cyan-circle: d75.



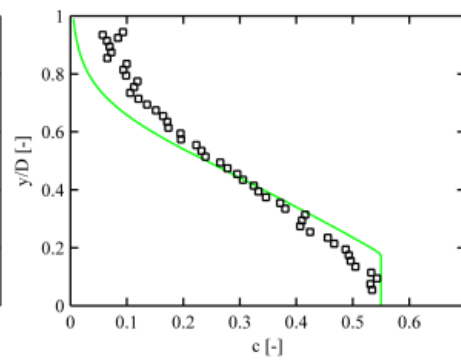
Inc. -20



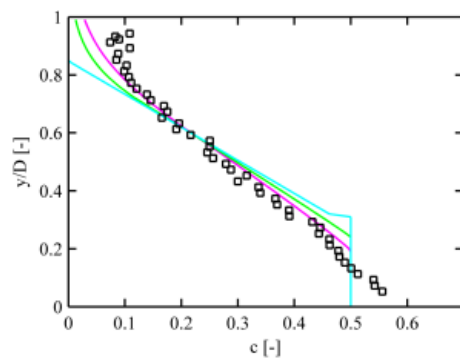
Inc -10



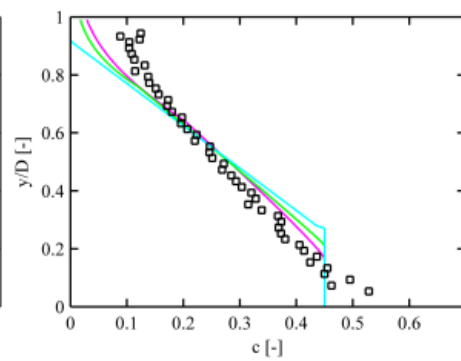
Inc. 0



Inc 10



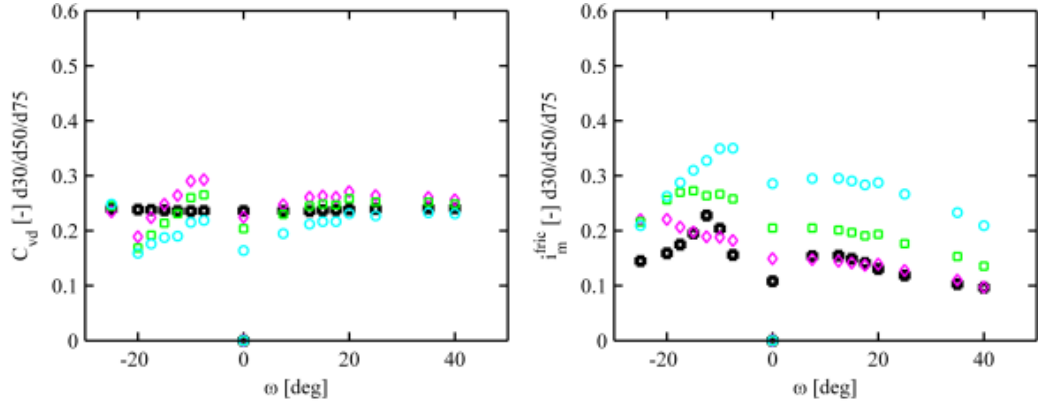
Inc. 20



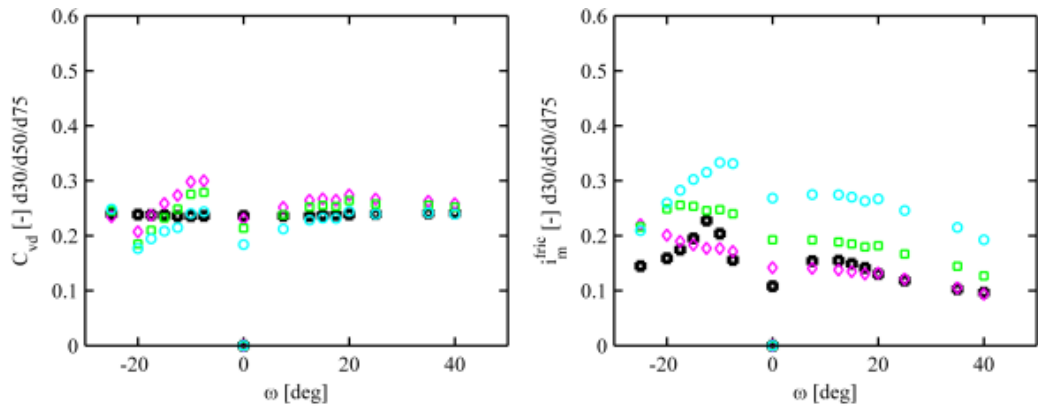
Inc 35

Solids concentration profile of sand-water flow at $V_m \approx 2.5$ m/s and $C_{vd} \approx 0.24$ at different inclination angles, with $transpEq = 1$, $Cmode = 2$, $fricEq = 9$; Legend: black-square: measured concentration profile; green-square: d50; magenta-diamond: d30; cyan-circle: d75.

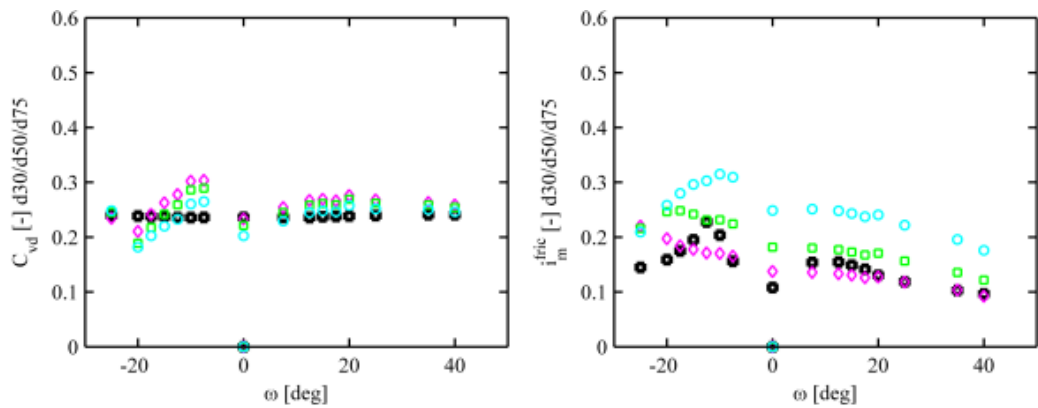
FricEq (2):



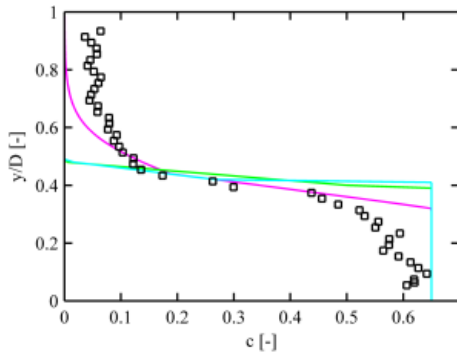
FricEq (6):



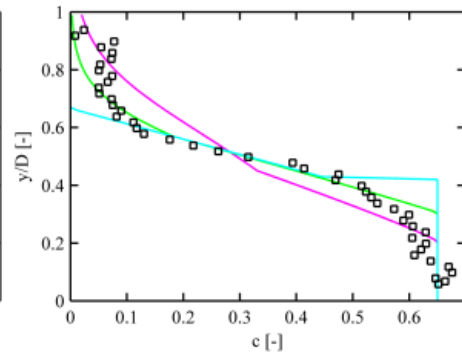
FricEq (9):



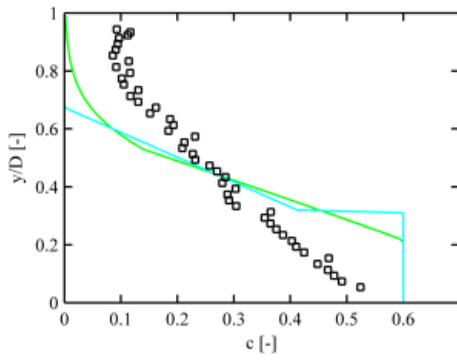
Results for different friction gradients and spatial volumetric concentrations, of sand-water flow, at $V_m \approx 2.5$ m/s and $C_{vd} \approx 0.24$, at different inclination angles, with $transpEq = 2$, $Cmode = 2$, $fricEq = 2-6-9$; Legend: black-square Measured frictional hydraulic gradient/ C_{vi} ; green-square: d50; magenta-diamond: d30; cyan-circle: d75.



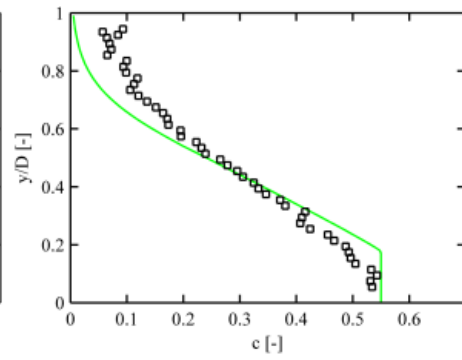
Inc. -20



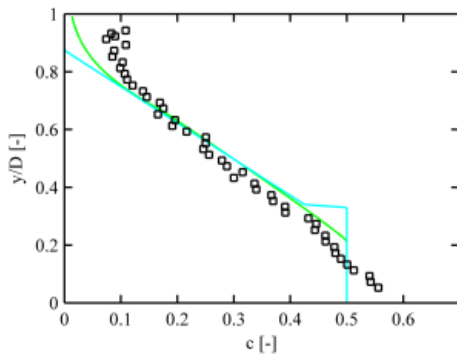
Inc -10



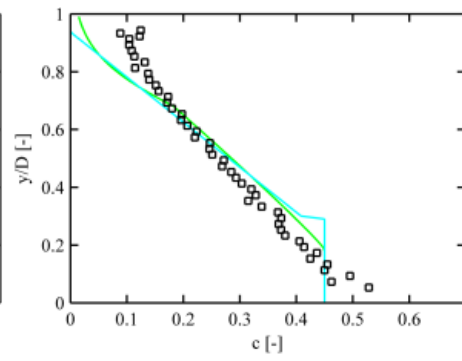
Inc. 0



Inc 10

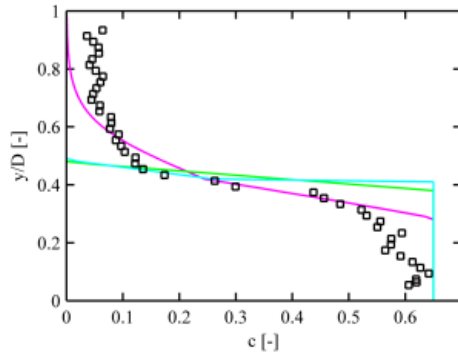


Inc. 20

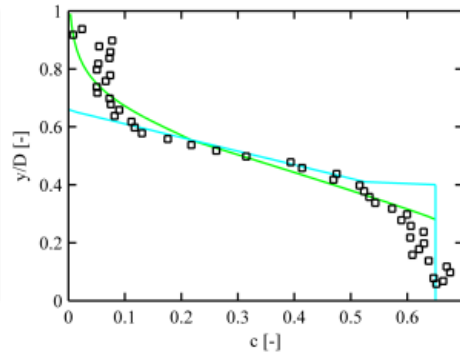


Inc 35

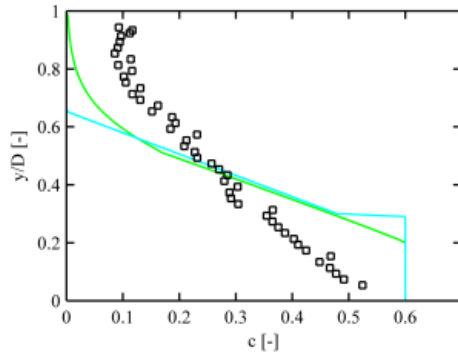
Solids concentration profile of sand-water flow at $V_m \approx 2.5$ m/s and $C_{vd} \approx 0.24$ at different inclination angles, with $transpEq = 2$, $Cmode = 2$, $fricEq 2$; Legend: black-square: measured concentration profile; green-square: d50; magenta-diamond: d30; cyan-circle: d75.



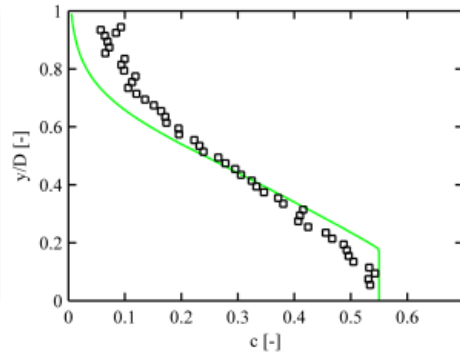
Inc. -20



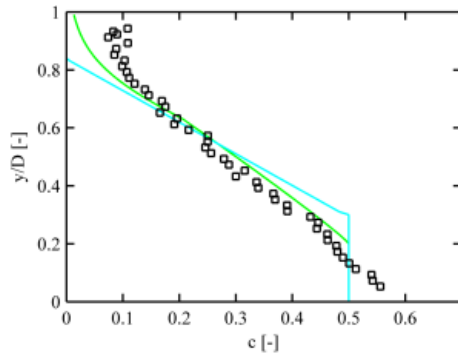
Inc -10



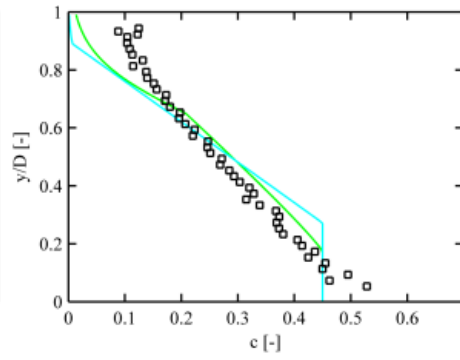
Inc. 0



Inc 10

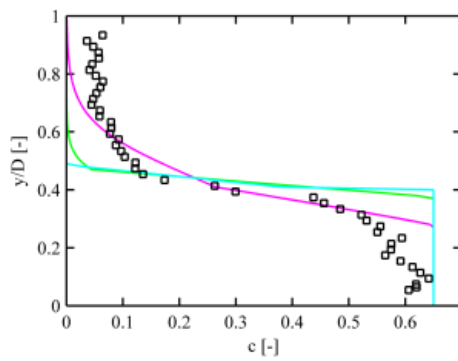


Inc. 20

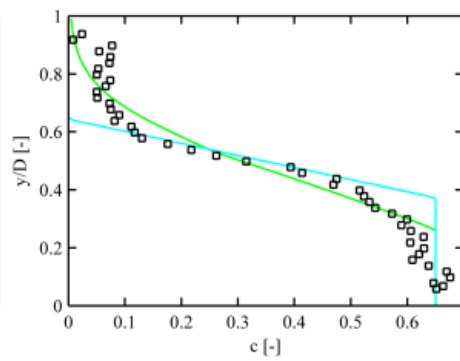


Inc 35

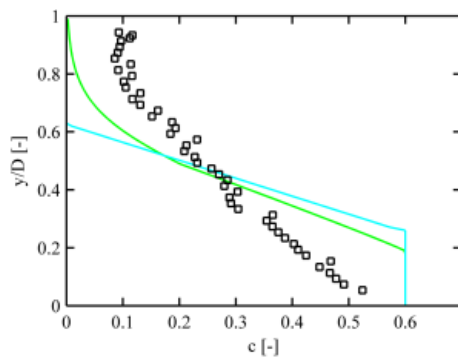
Solids concentration profile of sand-water flow at $V_m \approx 2.5$ m/s and $C_{vd} \approx 0.24$ at different inclination angles, with $transpEq = 2$, $Cmode = 2$, $fricEq = 6$; Legend: black-square: measured concentration profile; green-square: d50; magenta-diamond: d30; cyan-circle: d75.



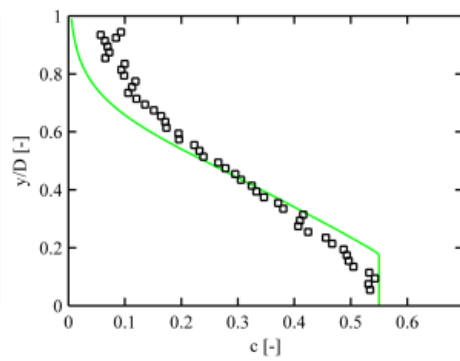
Inc. -20



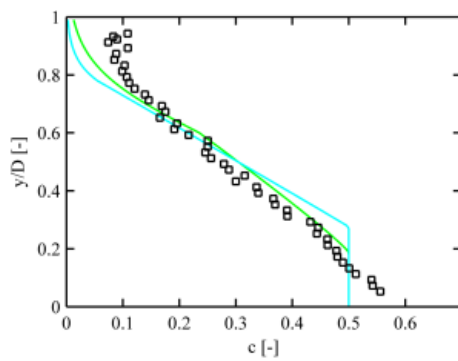
Inc -10



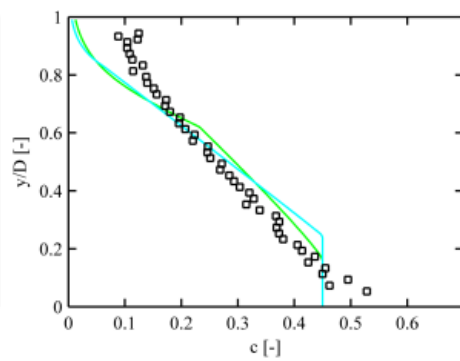
Inc. 0



Inc 10



Inc. 20



Inc 35

Solids concentration profile of sand-water flow at $V_m \approx 2.5$ m/s and $C_{vd} \approx 0.24$ at different inclination angles, with $transpEq = 2$, $Cmode = 2$, $fricEq = 9$; Legend: black-square: measured concentration profile; green-square: d50; magenta-diamond: d30; cyan-circle: d75.