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NOMENCLATURE

I	turbulent intensity
D	hydraulic diameter
Re	Reynolds number
d	undetermined fitting coefficient
J	transformation Jacobian
Q	vector of variables
F	convective flux terms
G	convective flux terms
H	convective flux terms
F _v	viscous flux terms
G _v	viscous flux terms
H _v	viscous flux terms
d	the distance to the closest wall in the S-A model
L _t	the length scale in the SST model
Δ	largest distance between the cell centers
C _{DES}	constant
t	time
F _L	lift force of the pier
F _D	drag force of the pier
ρ	fluid density
v	velocity of fluid flow at infinity
S	effective section area perpendicular to the flow direction
D ₀	pier diameter of the checking model
L	submerged depth of the pier
C _D	drag coefficient
C _L	lift coefficient
D _u	diameter of the combined pier

Subscripts

V	symbol of viscous flux terms
t	symbol of length scale in the SST model
DES	symbol of DES model
L	symbol of lift force
D	symbol of drag force
0	symbol of pier diameter of the checking model
u	symbol of diameter of combined pier