

Nomenclature

<i>Symbol</i>	<i>Description</i>
a	Real constant
C_p	Pressure co-efficient around single polygonal cylinder
C_p^s	Pressure co-efficient on the surface of single polygonal cylinder
C_{p_c}	Pressure co-efficient around single circular cylinder
C_{p_j}	Pressure co-efficient around j^{th} cylinder in pair of circular-circular, polygonal-circular, and polygonal-polygonal cylinders
C_{f_x}, C_{f_y}	Force co-efficient in x and y direction respectively
D_j	Hydraulic diameter of j^{th} polygonal cylinder
F_x	Hydrodynamic force acting on cylinders along x direction
F_y	Hydrodynamic force acting on cylinders along y direction
H	Center-to-center distance between two polygonal cylinders in z -plane
h	Distance of tracing point from center of rolling circle in hypotrochoidal mapping
N	Number of sides of polygonal cylinder
n	Number of terms in series
$P(\zeta, \beta)$	Laurent series function in an annulus domain D_ζ
P^*	Dimensionless pressure
q	The radius of smaller circle of an annulus in ζ -plane
R_d	Radius of directing circle in hypotrochoidal mapping
R_r	Radius of rolling circle in hypotrochoidal mapping
R_1	Radius of circle ξ_2 (Cylinder-2) in ξ -plane
U	Free stream velocity of uniform potential flow
u	Real part of velocity V around polygonal cylinder, pair of polygonal-circular and pair of polygonal cylinders
u_c	Real part of velocity V_c around single circular cylinder
V	Velocity around single polygonal cylinder
v	Imaginary part of velocity V around polygonal cylinder, pair of polygonal-circular and pair of polygonal cylinders

v_c	Imaginary part of velocity V_c around single circular cylinder
V^s	Velocity on the surface of single polygonal cylinder
V_c	Velocity around single circular cylinder
V_j	Velocity around j^{th} cylinder in pair of circular-circular, polygonal-circular, and polygonal-polygonal cylinders
W_v	Complex potential function for a vortex in an annulus in ζ -plane
W_U	Complex potential function for a doublet in an annulus in ζ -plane
w_v	Complex potential function for the vortex inside a unit circle in ζ -plane
z_1, z_2	Polygonal cylinders in z -plane

Greek Symbol Description

α	Angle of attack measured from positive real axis
β	Vortex location inside an annulus domain in ζ -plane
β_R	Real part of β
β_I	Imaginary part of β
γ	Orientation angles single polygonal cylinder
γ_1, γ_2	Orientation angles cylinder z_1 and z_2 measured from positive real axis
ζ_1, ζ_2	Circle of unit radius and radius q forming an annulus domain in ζ -plane.
ξ_1, ξ_2	Pair of circles of diameter d and D separated by distance H in ξ -plane
θ	Angular location on the surface of single circular or polygonal cylinder
θ_j	Angular location on the surface of j^{th} cylinder in the pair of circular-circular, polygonal-circular, and polygonal-polygonal cylinders
λ	Real constant
ρ	Corner radii of single polygonal cylinder
ρ_1, ρ_2	Corner radii of polygonal cylinders z_1 and z_2
ϱ	Density of fluid
ϕ	Velocity potential
ψ	Stream function

<i>Script</i>	<i>Description</i>
\mathcal{C}_j	Distance of j^{th} cylinder from origin in z -plane
$\mathcal{g}(\zeta)$	Complex potential function of point vortex in unbounded fluid region
$\mathcal{P}(\zeta, \beta)$	Complex potential function for a doublet inside a unit circle in ζ -plane