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List of Abbreviations and Symbols

Abbreviations

CFD	Computational fluid dynamics
DNS	Direct numerical simulation
LES	Large Eddy Simulation
RANS	Reynolds-Averaged Navier-Stokes
RSM	Reynolds stress model
ASM	Algebraic stress model
LGS	Line Gauss-Seidel method
TDMA	Tri-diagonal matrix algorithm
SIMPLE	Semi-Implicit Method

Symbols

$\overline{u}$	Mean velocity components, m/s
$\overline{u_i'}$	Velocity fluctuation, m/s
$\overline{\mathrm{P}}$	Pressure, $\mathrm{N/m^2}$
x_i	Coordinate axis (x, y, z)
ρ	Density, $\mathrm{kg/m^3}$
g_i	Gravitational acceleration vector, $\mathrm{m/s^2}$
β	Thermal expansion coefficient, $\mathrm{K^{-1}}$
μ	Viscosity, $\mathrm{N\cdot s/m^2}$
μ_t	Turbulent or eddy viscosity, $\mathrm{N\cdot s/m^2}$
$\overline{T}$	Mean temperature, K
$\overline{T'}$	Temperature fluctuation, K
τ_{ij}	Reynolds stress, $\mathrm{N/m^2}$
Γ_t	Turbulent scalar diffusivity
σ_H	Turbulent-Prandtl number
δ_{ij}	Kronecker delta
k	Turbulent kinetic energy

List of Abbreviations and Symbols (Continued)

ν_t	Kinematics turbulent viscosity, m^2/s
ℓ	Turbulent length scale, m
C	Dimensionless constant of proportionality
y	Coordinate normal to the wall, m
κ	von Karman's constant
k	Turbulent kinetic energy
ε	Dissipation rate
P	Shear production term
G	Buoyancy production term
Π_{ij}	Pressure-strain correlation term
Ω_{ij}	Rotation term
D_{it}	Diffusion term
ω_k	Rotation vector
e_{ijk}	Alternation symbole
R_{ij}	Reynolds stress gradients
ϕ	Scalar variable value