u	radial component of fluid velocity
V	non-dimensional axial component of fluid velocity
v	azimuthal component of fluid velocity
v^*	the specific volume
W	shock velocity
w	axial component of fluid velocity
w_a	constant
(r, θ, z)	cylindrical coordinates

Greek Letters

ρ	the fluid density
δ	constant
ϕ	non-dimensional azimuthal component of fluid velocity
α	constant
β	ratio of density across the shock front
Γ	gas constant
γ	ratio of specific heats
σ	magnetic field variation index.
μ	magnetic permeability
x	arbitrary function of r and t
λ	constant
ε	constant
ξ	similarity variable
ζ	vorticity vector
$(\zeta_r, \zeta_\theta, \zeta_z)$	components of vorticity vector

Subscripts

0	immediately ahead the shock
1	immediately behind the shock

Superscript

'	derivative with respect to t