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 $w$  density variation index

### **Greek Letters**

$\rho$  the fluid density  
 $\rho_0$  constant  
 $\delta$  shock radius variation index  
 $\alpha$  magnetic field variation index  
 $\Gamma$  gas constant  
 $\gamma$  ratio of specific heats  
 $\sigma$  Stephen's Boltzmann constant.  
 $\beta$  ratio of density across the shock front  
 $\mu$  magnetic permeability  
 $\xi$  arbitrary function of  $r$  and  $t$   
 $\lambda$  constant  
 $\varepsilon$  constant  
 $\eta$  similarity variable

### **Subscripts**

1 immediately ahead the shock  
2 immediately behind the shock

### **Superscript**

' derivative with respect to  $t$