

indmc1.gce

Attributes

```
mainvars:
+ ids   idr   iqs   iqr
+ psids psidr psiqs psiqr
+ wr    wrm   tem
+ vds   vqs
rparms:
+ rs=0.435 lls=0.002 lm=0.0693 llr=0.002 rr=0.816
+ j=0.089 tl=0 poles=4
```

Description

indmc1.gce is an induction machine with the following model equations:

$$\begin{aligned}i_{ds} &= \frac{l_r}{l_m l_e} \psi_{ds} - \frac{1}{l_e} \psi_{dr} \\i_{dr} &= \frac{1}{l_m} \psi_{ds} - \left(\frac{l_{ls}}{l_m} + 1 \right) i_{ds} \\i_{qs} &= \frac{l_r}{l_m l_e} \psi_{qs} - \frac{1}{l_e} \psi_{qr} \\i_{qr} &= \frac{1}{l_m} \psi_{qs} - \left(\frac{l_{ls}}{l_m} + 1 \right) i_{qs} \\T_{em} &= \frac{3}{4} l_m (i_{qs} i_{dr} + i_{ds} i_{qr}) \\\omega_r &= \frac{P}{2} \omega_{rm} \\\dot{\psi}_{ds} &= v_{ds} - r_s i_{ds} \\\dot{\psi}_{qs} &= v_{qs} - r_s i_{qs} \\\dot{\psi}_{dr} &= -\omega_r \psi_{qr} - r_r i_{dr} \\\dot{\psi}_{qr} &= \omega_r \psi_{dr} - r_r i_{qr} \\\dot{\omega}_r &= \frac{P}{2} \frac{T_{em} - T_L}{J}\end{aligned}$$

AC behaviour is not implemented.