$_{L}ATEX.bib$

[1,†,‡] [1,‡] ß¨o [2,] ßö [1] [2]

ab

Title 1Title 2Title 3

Inertia constant (H) $E_k S_{nom}$
Acceleration time constant ($\mathbf{T_a}$) P_{nom}
$ff_0 \Delta P$

HT_a **????**
?

$H_{wt}\omega_{pu}$
$K_i P_{wt}$
?

H**?**
$\mathbf{T_{wt}}$ $\mathbf{H_{wt}}$ (s) $\mathbf{P_{wt}}$ (MW) $\mathbf{K_i}$
n_{wt} [1]
ab ,

$P_a P_{mech} P_{elec} t_{cr} P_{IBFPR} \Delta P \Delta P / t_{nadir} t_{nadir} t_{cr} P_{elec} - P_{mech} P_{elec} \Delta P$
$P_{mech} \Delta P * t_{cr} / {}_{tnadir} P_{elec} \Delta P P_{IBFPR} t_{cr}$

$P_{IBFPR} t_{cr}$

$\Delta P t_{nadir} t_{cr}$**?**
Small scale grid case:??
Large scale grid case:~ 30**???**
Quantity
?$1/(2 * H * S)H$'S'**???**
'**??**
?
$_{F}PRmodelOnelinediagramoftheIEEE9busmodel.TheinverterbasedfrequencyresponsehasbeenaddedAtthesamebusoft$
$_{s}ysitcanbeeasilycalculatedthatthesystemkineticenergywith14sis2205MWs(100\%synchronousgeneration).T_{sys} =$
$(2*$
$E_k)/P_{load}(8)$
fss
Bus numberBus TypeVoltage (pu)Active Power (MW)Reactive Power (MVAr)
$0°$
$9.83°$
$4.63°$
$-4.42°$
$-4.16°$
$0.17°$
$_{p}, thepositivesequencecomponentofphasevoltageandlinecurrentareobtained$[**?**].

$$S_{3\varphi}^{1} = 3 * V_{LN}^{1} * \bar{I_L}^{1} \quad (9)$$

$$S_{3\varphi}^{1} = 3 * V_{LNpeak}^{1} * \bar{I_{Lpeak}}^{1} 2 \quad (10)$$

$$I_{Lpeak}^{1} = 2 * \bar{S}_{3\varphi}^{1} 3 * V_{LNpeak}^{1} \quad (11)$$

a
$-0.5+$
$j\sqrt{3}$
$1120°)$
$V_a +$
$V_b +$
$V_c =$
0
$V_a^1 =$
$\frac{V_a + aV_b + a^2 V_c}{3}$
$^{1}_{a} =$
$\frac{V_a + aV_b - a^2 V_b - a^2 3}{}$
$V_a * (1 - a^2) + aV_b * (1 - a) 3$
V^{1}

T_{sys}
$_{sys}=$
$\sum_{i=1}^{n} P_i * T_i P_{LOAD}$
$\overline{=} nP_{nom} * T_i P_{LOAD}$
$\overline{=} P_{syncload} * T_{nom} P_{LOAD} * dl$
$\overline{=} Syncshare * T_{nom} dl$
$T_{sys} =$
12.5
$T_{nom} =$
10
??
$dl =$
0.8
?
$\frac{df}{dt} =$
$\frac{\Delta P * f_0}{2 * E_k}$
$T_{sys} =$
$\frac{2 * E_k}{P_{LOAD}}$
$\Delta P *$
$f_0 P_{LOAD} * T_{sys}$
$\overline{=} \Delta P_{pu} * f_0 P_{LOAD} * T_{sys}$
ΔP_{pu}
P_{LOAD}