

POUYA

Power_system Online_simulation Unveil Your Analysis

A Real Time Simulator



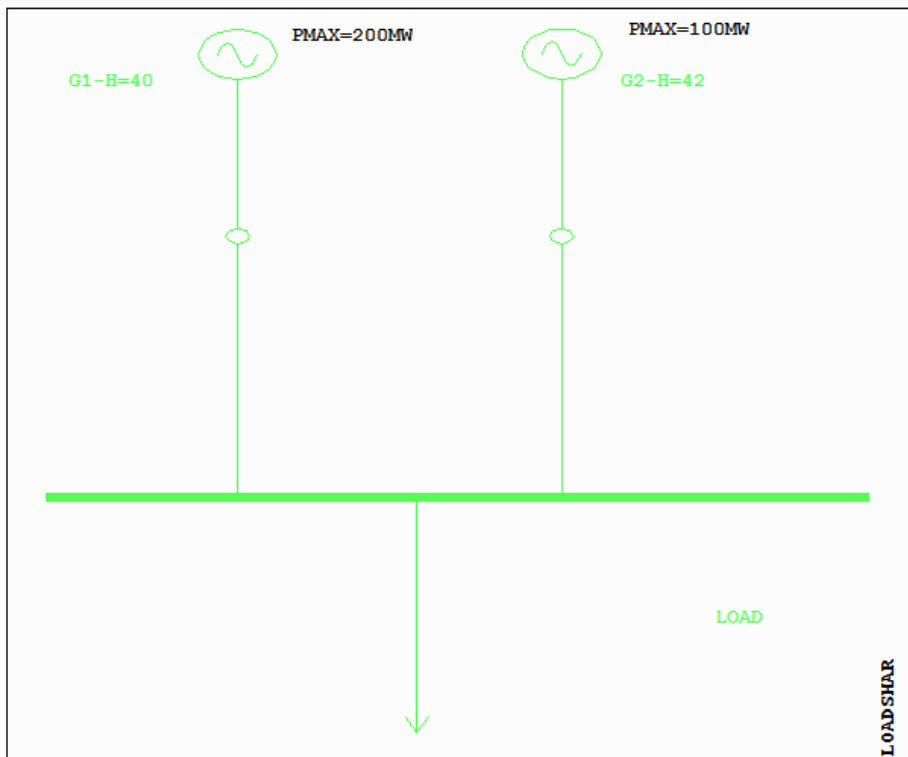
POWER SYSTEM ANALYSIS LAB.

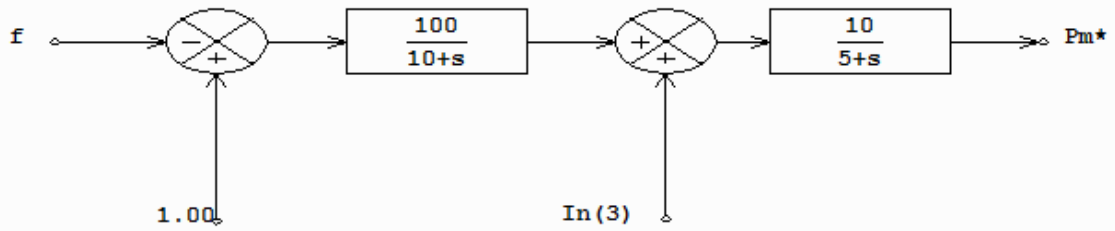
Power system operation

Discover how a change of power demand distribute between two generators

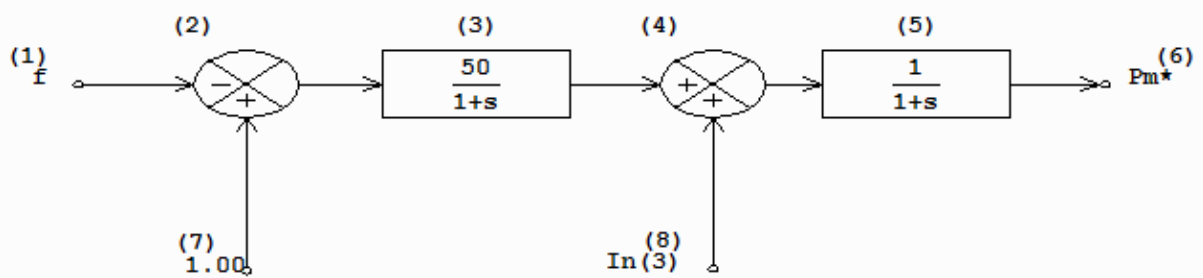
Generator inertia and Governor Droop exercises

Enter these values on exercise sheet: <http://www.intelectri.com/sheet/h>

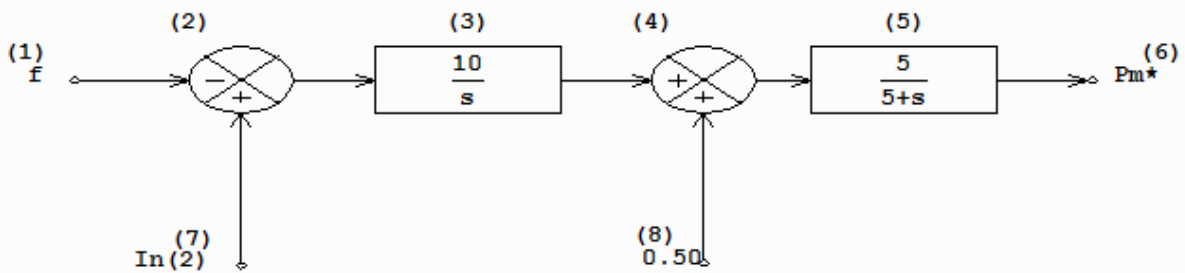




Droop=10%



Droop=2%



Droop=Infinity . Generator act as follower

EXERCISES

- 1- Bring the network and change the load by 40MW ;
- 2- How is the initial distribution of power between the generator?
- 3- Calculate these values by using inertia formula;
- 4- How is the final distribution of power between the generators
- 5- What is the final frequency?

“The software owner retains copyright © to the software manuals”

- 6- Calculate these values by using droop formula.
 - 7- Change the load by 90MW and answer the above questions for both networks.
 - 8- Change the load down and up and approve your formulas.
 - 9- Change the generator power (governor P_c), and observe the results.
 - 10- Change follower power (governor P_c), and observe the results.
 - 11- Explain why in the former case you can not change the power, and why the frequency is 50 HZ.
 - 12- The network has not been equipped with under or over frequency relay. Find the frequency relay settings if they are existed.
 - 13- having the cost function of the generators as:
 $C_1 = 2000 + 0.4P_{G1} + 0.020P_{G1}^{**2}$ EURO
 $C_2 = 3000 + 0.2P_{G2} + 0.015P_{G2}^{**2}$ EURO
- Tune the generators to work at 50 HZ and operate at the optimal place for both networks. Approve the operating point by hand calculation.