ACS214

**Computer Aided Control Systems Analysis and Design Using MATLAB**

**The plant is a fourth order system which critical damped with unity feedback, and the target is to lower the overshoot to 15%.**

**To get the 15% overshoot, the following equations will be used during the calculation, the maximum overshoot can be obtained by setting to get ** by using Equation 1, andthen work out the phase margin using the equation 2, and use the bode diagram to find out the gain crossover frequency for that phase margin. Then use the property of the |K\*G(jw)|= 0dB=1, plug in the ω inside the equation to work out the K. And the K is required proportional gain compensator.