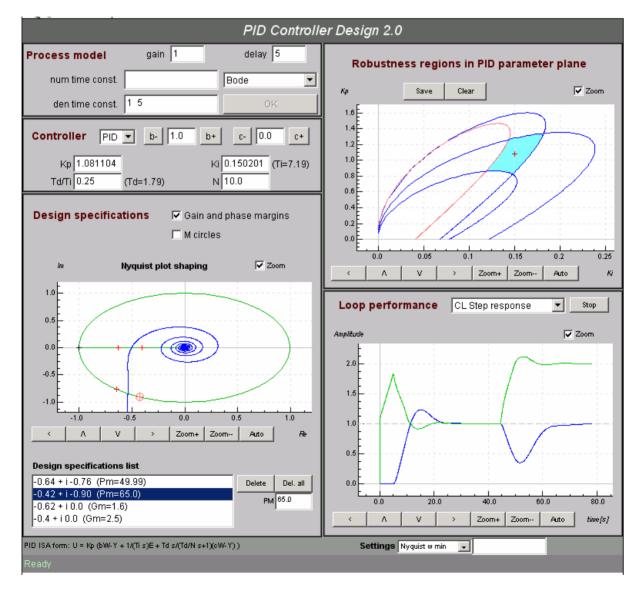# The analyse of the sensitivity to the PID parameters changes using applet www.PIDlab.com

Let us assume that we want to design the PID controller for process described by the transfer function

$$F(s) = \frac{e^{-5s}}{(s+1)(5s+1)} .$$

We require *Pm* = 60° and *Gm* = 2 approximately. We want to know the area of PID parametres that satisfies $Pm \in (50^{\mathbf{o}}, 65^{\mathbf{o}})$ and $Gm \in (1.6, 2.5)$. This area can be easily determined by the applet. Proceed in following steps.

1) Define new process model using BODE or SOPDT form. We specify two time constants and the transport delay.
2) Paint four regions for interval bounds [1].
3) These regions will determine the area directly.

[1] PID controller design on Internet: www.PIDlab.com