```
>> Model_analysis_with_uncertainty

margins =

     GainMargin: 0.0707
    GMFrequency: 4.4670
    PhaseMargin: 76.0715
    PMFrequency: 50.6347
    DelayMargin: 0.0262
    DMFrequency: 50.6347
         Stable: 1


stabmarg =

                LowerBound: 0.9099
                UpperBound: 1.9902
    DestabilizingFrequency: 0.1005


destabunc =

        C_f: 5.2414e+03
        C_r: 1.5074e+03
        I_x: 0.0196
        I_z: 0.0540
        L_f: 0.5607
        L_r: 0.7294
          h: 0.2525
    landa_f: 299.5095
    landa_r: 100.4905
          m: 48.9313


Report =

Uncertain system is possibly not robustly stable to modeled uncertainty.
 -- It can tolerate up to 91% of the modeled uncertainty.
 -- A destabilizing combination of 199% of the modeled uncertainty was found.
 -- This combination causes an instability at 0.1 rad/seconds.
 -- Sensitivity with respect to the uncertain elements are:
     'C_f' is 27%.  Increasing 'C_f' by 25% leads to a 7% decrease in the margin.
     'C_r' is 17%.  Increasing 'C_r' by 25% leads to a 4% decrease in the margin.
     'I_x' is 78%.  Increasing 'I_x' by 25% leads to a 20% decrease in the margin.
     'I_z' is 28%.  Increasing 'I_z' by 25% leads to a 7% decrease in the margin.
     'L_f' is 6%.  Increasing 'L_f' by 25% leads to a 2% decrease in the margin.
     'L_r' is 9%.  Increasing 'L_r' by 25% leads to a 2% decrease in the margin.
     'h' is 8%.  Increasing 'h' by 25% leads to a 2% decrease in the margin.
     'landa_f' is 5%.  Increasing 'landa_f' by 25% leads to a 1% decrease in the
margin.
     'landa_r' is 5%.  Increasing 'landa_r' by 25% leads to a 1% decrease in the
margin.
     'm' is 12%.  Increasing 'm' by 25% leads to a 3% decrease in the margin.
```

```
perfmarg =

           LowerBound: 0.9071
           UpperBound: 83.3865
    CriticalFrequency: 118.9750


perfmargunc =

        C_f: 3.2396e+03
        C_r: 1.5353e+03
        I_x: 0.0940
        I_z: 0.6669
        L_f: 0.5479
        L_r: 0.7309
          h: 0.4655
    landa_f: 212.0001
    landa_r: 185.3630
          m: 48.6708


Report =

Uncertain system may not achieve performance robustness to modeled uncertainty.
 -- The tradeoff of model uncertainty and system gain is balanced at a level of
90.7% of the modeled uncertainty.
 -- A model uncertainty of 8.34e+03% can lead to input/output gain of 0.012 at 110
rad/seconds.
 -- Sensitivity with respect to the uncertain elements are:
     'C_f' is 27%.  Increasing 'C_f' by 25% leads to a 7% decrease in the margin.
     'C_r' is 16%.  Increasing 'C_r' by 25% leads to a 4% decrease in the margin.
     'I_x' is 79%.  Increasing 'I_x' by 25% leads to a 20% decrease in the margin.
     'I_z' is 33%.  Increasing 'I_z' by 25% leads to a 8% decrease in the margin.
     'L_f' is 10%.  Increasing 'L_f' by 25% leads to a 3% decrease in the margin.
     'L_r' is 7%.  Increasing 'L_r' by 25% leads to a 2% decrease in the margin.
     'h' is 8%.  Increasing 'h' by 25% leads to a 2% decrease in the margin.
     'landa_f' is 5%.  Increasing 'landa_f' by 25% leads to a 1% decrease in the
margin.
     'landa_r' is 8%.  Increasing 'landa_r' by 25% leads to a 2% decrease in the
margin.
     'm' is 14%.  Increasing 'm' by 25% leads to a 4% decrease in the margin.
```