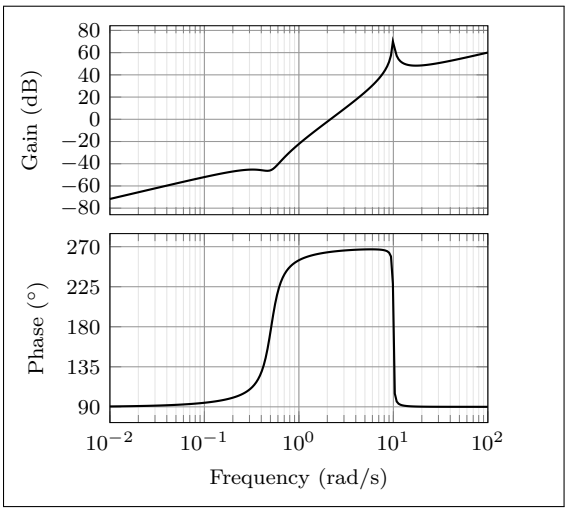
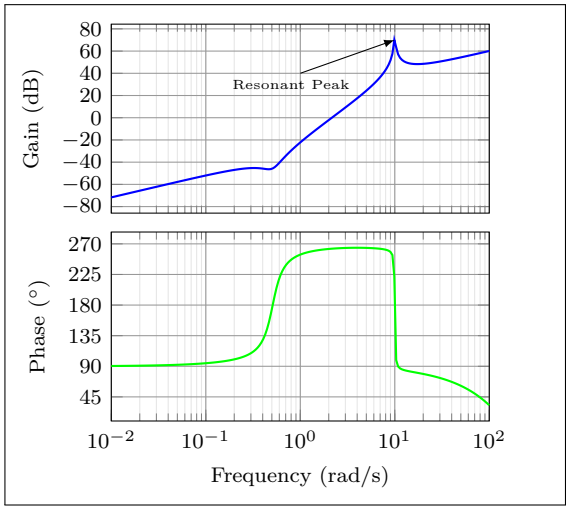
Bode plot in ZPK format



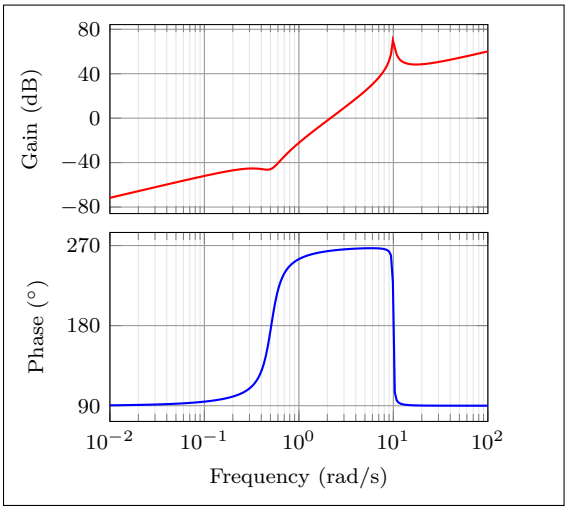

```
\BodeZPK{%
  z/{0,{-0.1,-0.5},{-0.1,0.5}},
  p/{{-0.1,-10},{-0.1,10}},
  k/10
}
{0.01}
{100}
```

Bode plot in TF format with arrow

```
\BodeTF[%
  plot/mag/{blue,thick},
  plot/ph/{green,thick},
  tikz/{>=latex},
  commands/mag/{
    \draw[->](axis cs:1,40) -- (axis cs:10,70);
    \node at (axis cs: 0.8,30) {\tiny Resonant Peak};
  }%
]
{num/{10,2,2.6,0},den/{1,0.2,100},d/0.01}
{0.01}
{100}
```



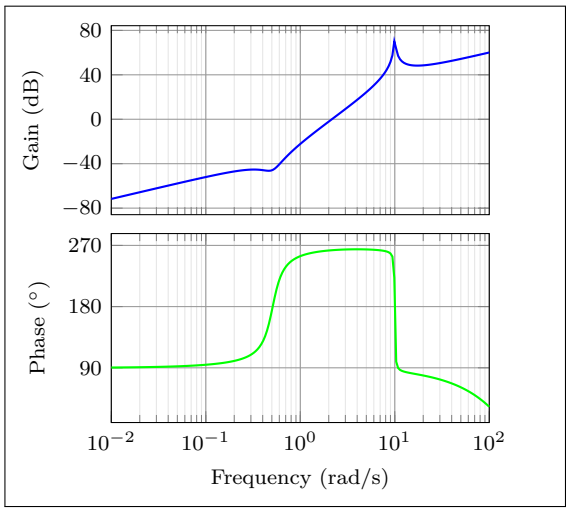
Linear approximation with customization



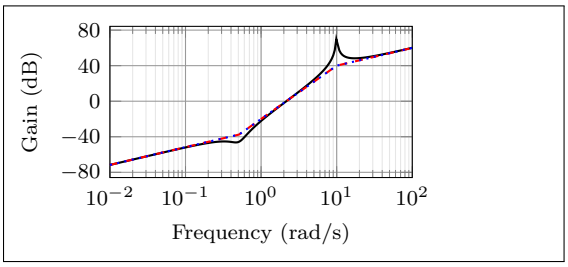

```
\BodeZPK[%
  plot/mag/{red,thick},
  plot/ph/{blue,thick},
  axes/mag/{ytick distance=40},
  axes/ph/{ytick distance=90},
  approx/linear
]{%
  z/{0,{-0.1,-0.5},{-0.1,0.5}},
  p/{{-0.1,-10},{-0.1,10}},
  k/10
}
{0.01}
{100}
```

Plot with delay and customization

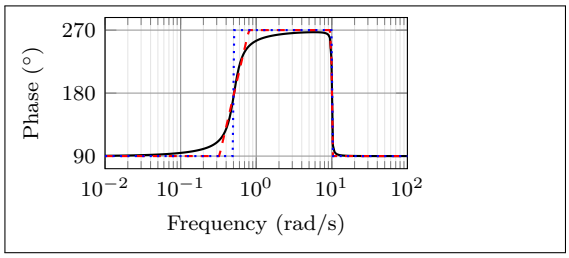
```
\BodeZPK[
  plot/mag/{blue,thick},
  plot/ph/{green,thick},
  axes/mag/ytick distance=40,
  axes/ph/ytick distance=90
]{%
  z/{0,{-0.1,-0.5},{-0.1,0.5}},
  p/{{-0.1,-10},{-0.1,10}},
  k/10,
  d/0.01
}
{0.01}
{100}
```



Individual gain and phase plots with more customization

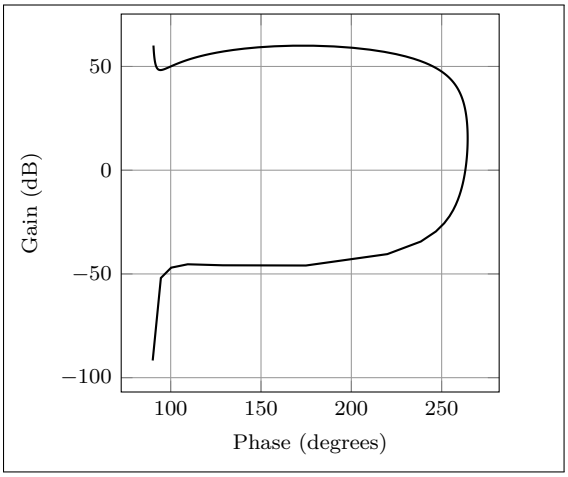



```
\begin{BodePlot}[%
  axes/{ylabel={Gain (dB)},
  ytick distance=40,
  height=2cm,
  width=4cm}
]
{0.01}
{100}
  \addBodeZPKPlots[%
    true/{black,thick},
    linear/{red,dashed,thick},
    asymptotic/{blue,dotted,thick}%
  ]
  {magnitude}
  {%
    z/{0,{-0.1,-0.5},{-0.1,0.5}},
    p/{{-0.1,-10},{-0.1,10}},
    k/10
  }
\end{BodePlot}
```




```
\begin{BodePlot}[%
  ylabel={Phase ($^{\circ}$)},
  height=2cm,
  width=4cm,
  ytick distance=90
]
{0.01}
{100}
  \addBodeZPKPlots[%
    true/{black,thick},
    linear/{red,dashed,thick},
    asymptotic/{blue,dotted,thick}%
  ]
  {phase}
  {%
    z/{0,{-0.1,-0.5},{-0.1,0.5}},
    p/{{-0.1,-10},{-0.1,10}},
    k/10
  }
\end{BodePlot}
```

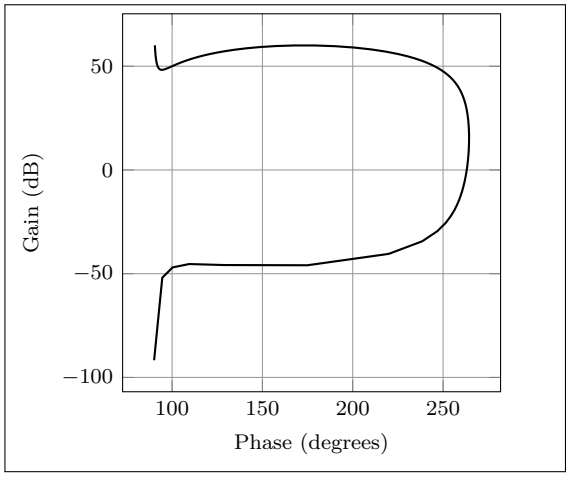
Nichols chart



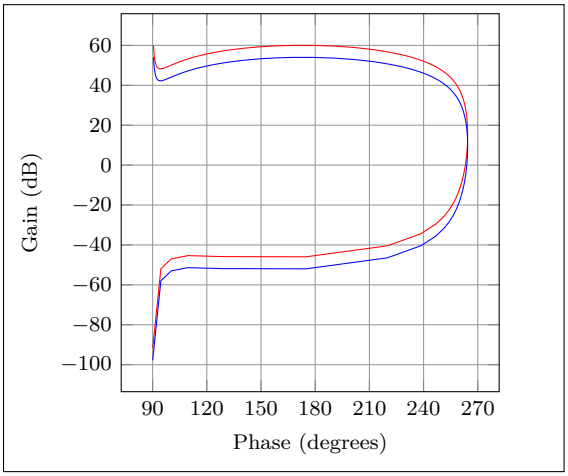

```
\NicholsZPK[samples=1000]
{%
  z/{0,{-0.1,-0.5},{-0.1,0.5}},
  p/{{-0.5,-10},{-0.5,10}},
  k/10
}
{0.001}
{100}
```

Nichols chart in TF format

```
\NicholsTF[samples=1000]
{num/{10,2,2.6,0},den/{1,1,100.25}}
{0.001}
{100}
```



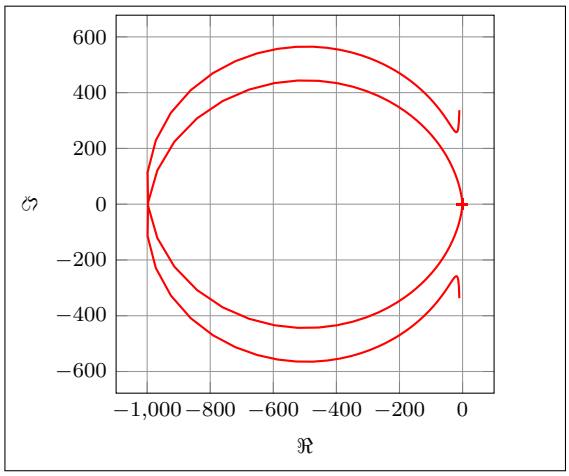
Multiple Nichols charts with customization



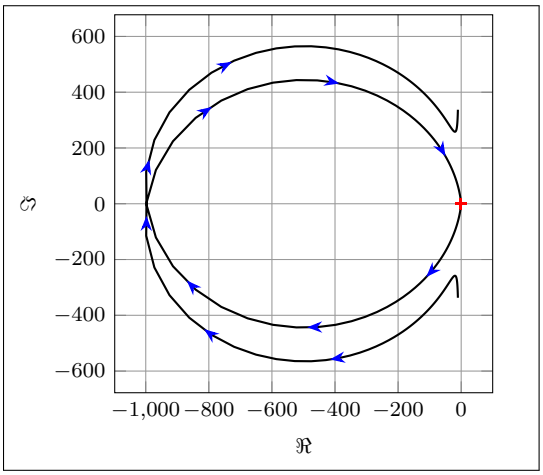

```
\begin{NicholsChart}[%
  ytick distance=20,
  xtick distance=30
]
{0.001}
{100}
  \addNicholsZPKChart [red,samples=1000] {%
    z/{0,{-0.1,-0.5},{-0.1,0.5}},
    p/{{-0.5,-10},{-0.5,10}},
    k/10
  };
  \addNicholsZPKChart [blue,samples=1000] {%
    z/{0,{-0.1,-0.5},{-0.1,0.5}},
    p/{{-0.5,-10},{-0.5,10}},
    k/5
  };
\end{NicholsChart}
```

Nyquist plot

```
\NyquistZPK[plot/{red,thick,samples=1000}]
{%
  z/{0,{-0.1,-0.5},{-0.1,0.5}},
  p/{{-0.5,-10},{-0.5,10}},
  k/10
}
{-30}
{30}
```



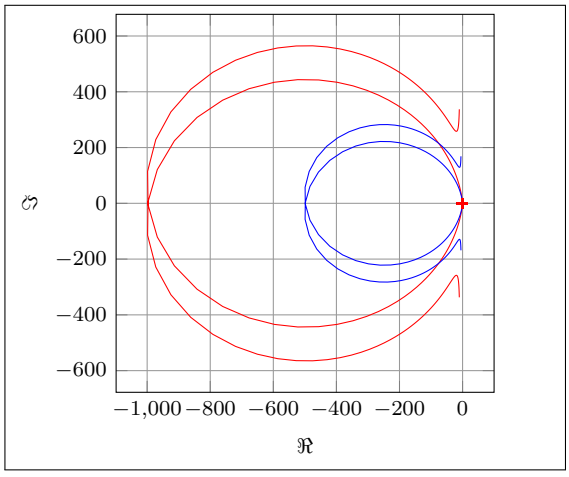
Nyquist plot in TF format with arrows



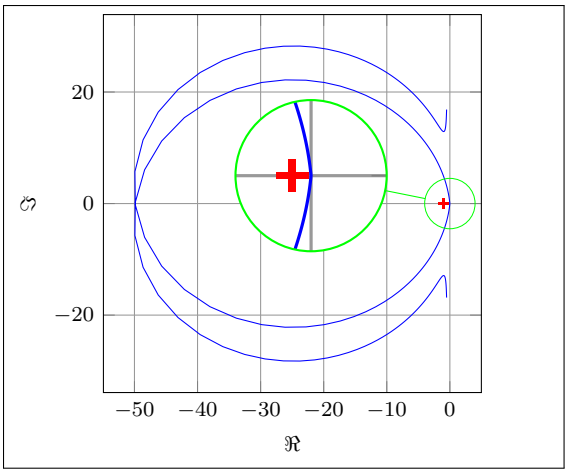

```
\NyquistTF[%
  plot/{%
    samples=1000,
    postaction=decorate,
    decoration={%
      markings,
      mark=between positions 0.1 and 0.9 step 5em with {
          %
        \arrow{Stealth [length=2mm, blue]}
      }
    }
  }%
]
{num/{10,2,2.6,0},den/{1,1,100.25}}
{-30}
{30}
```

Multiple Nyquist plots with customization

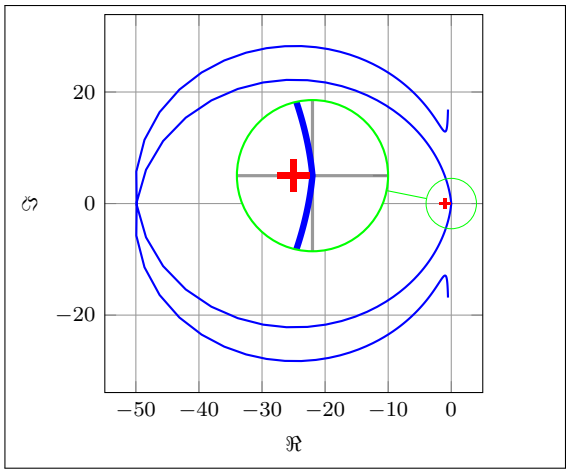
```
\begin{NyquistPlot}{-30}{30}
  \addNyquistZPKPlot [red,samples=1000] {%
    z/{0,{-0.1,-0.5},{-0.1,0.5}},
    p/{{-0.5,-10},{-0.5,10}},
    k/10
  };
  \addNyquistZPKPlot [blue,samples=1000] {%
    z/{0,{-0.1,-0.5},{-0.1,0.5}},
    p/{{-0.5,-10},{-0.5,10}},
    k/5
  };
\end{NyquistPlot}
```



Nyquist plots with additional commands, using two different macros




```
\begin{NyquistPlot}[%
  tikz/{%
    spy using outlines={%
      circle,
      magnification=3,
      connect spies,
      size=2cm
    }%
  }%
]
{-30}{30}
  \addNyquistZPKPlot [blue,samples=1000] {%
    z/{0,{-0.1,-0.5},{-0.1,0.5}},
    p/{{-0.5,-10},{-0.5,10}},
    k/0.5
  };
  \coordinate (spyon) at (axis cs:0,0);
  \coordinate (spyat) at (axis cs:-22,5);
  \spy [green] on (spyon) in
    node [fill=white] at (spyat);
\end{NyquistPlot}
```




```
\NyquistZPK[%
  plot/{blue,samples=1000},
  tikz/{%
    spy using outlines={%
      circle,
      magnification=3,
      connect spies,
      size=2cm
    }%
  },
  commands/{%
    \coordinate (spyon) at (axis cs:0,0);
    \coordinate (spyat) at (axis cs:-22,5);
    \spy [green] on (spyon) in
      node [fill=white] at (spyat);
  }%
]%
{
  z/{0,{-0.1,-0.5},{-0.1,0.5}},
  p/{{-0.5,-10},{-0.5,10}},
  k/0.5
}
{-30}
{30}
```