

## Frequency Domain Design Method: Disadvantages

Design based on Bode plots is **not good for**:

- ▶ exact closed-loop pole placement (root locus is more suitable for that)
- ▶ deciding if a given  $K$  is stabilizing or not ...
  - ▶ we can only measure *how far* we are from instability (using GM or PM), if we know that we are stable
  - ▶ however, we don't have a way of checking whether a given  $K$  is stabilizing from frequency response data

What we want is a frequency-domain substitute for the Routh–Hurwitz criterion — this is the **Nyquist criterion**, which we will discuss in the next lecture.