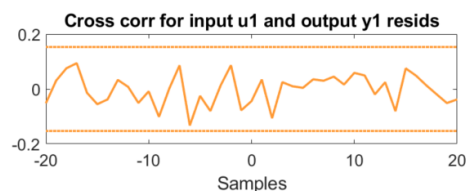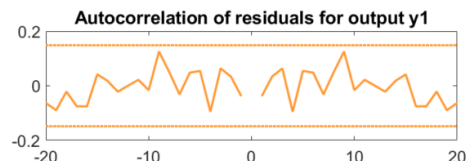# Model structure and order selection strategy
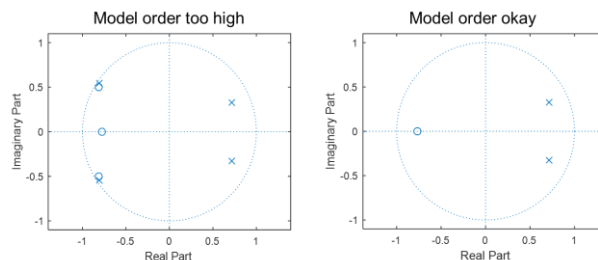
Delay estimation

```
data1 = iddata(y1,u1,1)
nk = delayest(data1)
```

Residual analysis

Zeros and poles cancelation

Parameters variance test

- Example 1
  - $A(q) = 1 - 1.397 \,(\pm 0.02608)q^{-1} + 0.5866 \,(\pm 0.01946)q^{-2}$
  - $B(q) = 0.2026 \,(\pm 0.01475)q^{-2} - 0.02881 \,(\pm 0.01828)q^{-3}$
  - $C(q) = 1 - 0.9909 \,(\pm 0.1401)q^{-1} + 0.2294 \,(\pm 0.1311)q^{-2}$

  The variance should be at most 25% of the parameter value

- Example 2
  - $A(q) = 1 - 1.425 \,(\pm 0.01208)q^{-1} + 0.6122 \,(\pm 0.01146)q^{-2}$
  - $B(q) = 0.1113 \,(\pm 0.002952)q^{-1} + 0.08808 \,(\pm 0.003689)q^{-2}$
  - $C(q) = 1 - 0.3811 \,(\pm 0.04841)q^{-1}$