```
>> z=randn(1,1000);
>> y=filter([1],[ 1 -0.6],z);
>> arkobo=arbootstr(y,1,1000);
>> hist(arkobo,100)
>> type  arbootstr

function arkobo=arbootstr(y,p,B)
arkobo=[];
fi=yuwaest(y,p);
res=filter([1 -fi],[ 1 ],y);
for i=1:B
    e=stovelstropp(res);
    yboots=filter([1 ],[ 1 -fi ],e);
    arbo=yuwaest(yboots,1);
    arkobo=[arkobo arbo];
end

>> std(arkobo)

ans =

    0.0245

>> arkobo=arbootstr(y,1,1000);
>> hist(arkobo,100)
>> z=rand(1,1000);
>> y=filter([1],[ 1 -0.2],z);
>> arkobo=arbootstr(y,1,1000);
>> hist(arkobo,100)
>> arkobo=arbootstr(y,1,1000);

fi =

    0.2841

>> hist(arkobo,100)
>> std(arkobo)

ans =

    0.0302

>>
```

NOISE $z_t \in N(0,1)$

$y_t = 0.6 y_{t-1} + z_t$ $\beta = 0.6$

BOOTSTRAP

YULE-WALKER ESTIMATE

RESIDUALS $\hat{\varepsilon}_t = y_t - \hat{fi}\, y_{t-1}$ (MEAN ZERO)

(ε_t^*)

$y_t^* = \hat{fi}\, y_{t-1}^* + \varepsilon_t^*$

fi^*

see p&b for lecture 03/24

UNIFORM NOISE.

TRUE PARAMETER = 0.2 = β

ESTIMATE OF AR(1) PARAMETER β

SAME FIGURE

HISTOGRAM

$y_t = 0.2 y_{t-1} + \varepsilon_t \qquad \beta = 0.2$

$t = 1, \ldots, 1000$

$\hat{\beta} = 0.2841$

$\hat{\varepsilon}_t = y_t - \hat{\beta} y_{t-1} \qquad t = 1, \ldots, 1000$

$\varepsilon_t^*(b)$ BOOTSTRAP DA $\hat{\varepsilon}_t \qquad b = 1, \ldots, B$

$z_t^* = \hat{\beta} z_{t-1}^* + \varepsilon^*(b)$

$\hat{\beta}^*(b) = \text{YOWTEST}(z^*, 1)$