



Finanzmathematik

Octave

File Edit Debug Window Help News

Current Directory: \Projektwoche Mathematik\Octave\Finzen

File Browser

C:/Users/Nera/Documents/Projektwoche Mathematik/Octave/Finzen

Name

- BaseRep.m
- BlackScholes.m
- CallValue.m
- CallValueQMC.m
- Corput.m
- Halton.m
- PlotHalton.m
- PutValue.m
- Simulation.m
- TestBS.m
- TestCallValueMC.m
- TestPutBS.m
- TestSim.m
- TestSimMult.m

Workspace

Name	Class	Dimension	Value	Attribute
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Command History

- ComparePlots
- ComparePlots
- ComparePlots
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- ComparePlots
- ComparePlots
- exit

Octave 4.2.1, Wed Feb 14 16:57:36 2018 GMT <unknown@unknown>

Editor

File Edit View Debug Run Help

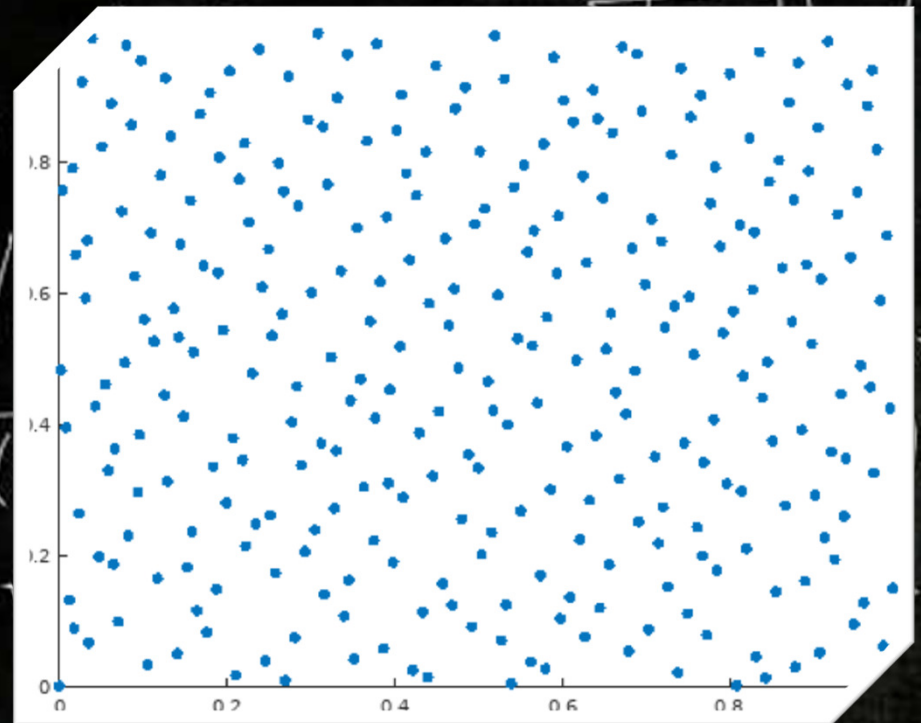
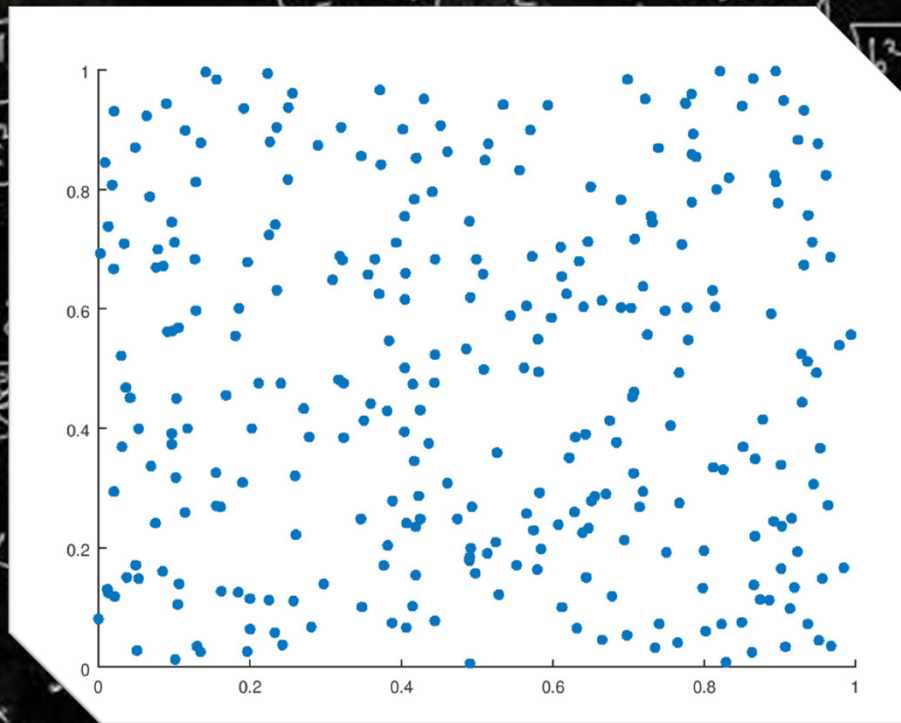
TestCallValueMC.m TestSim.m BlackScholes.m *CallValue.m

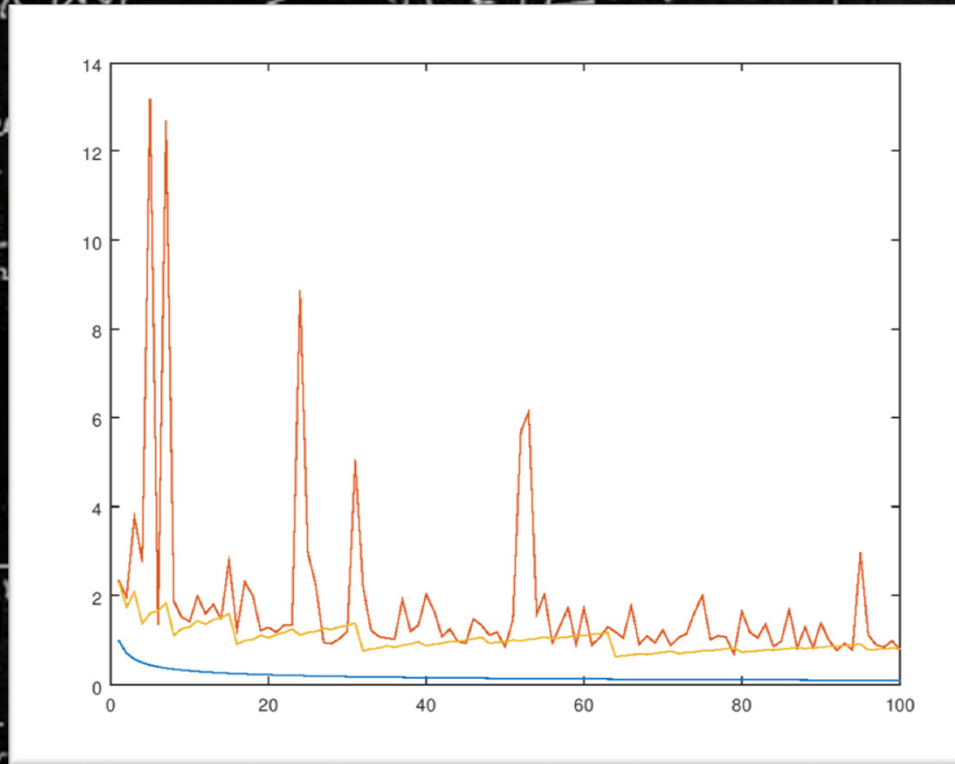
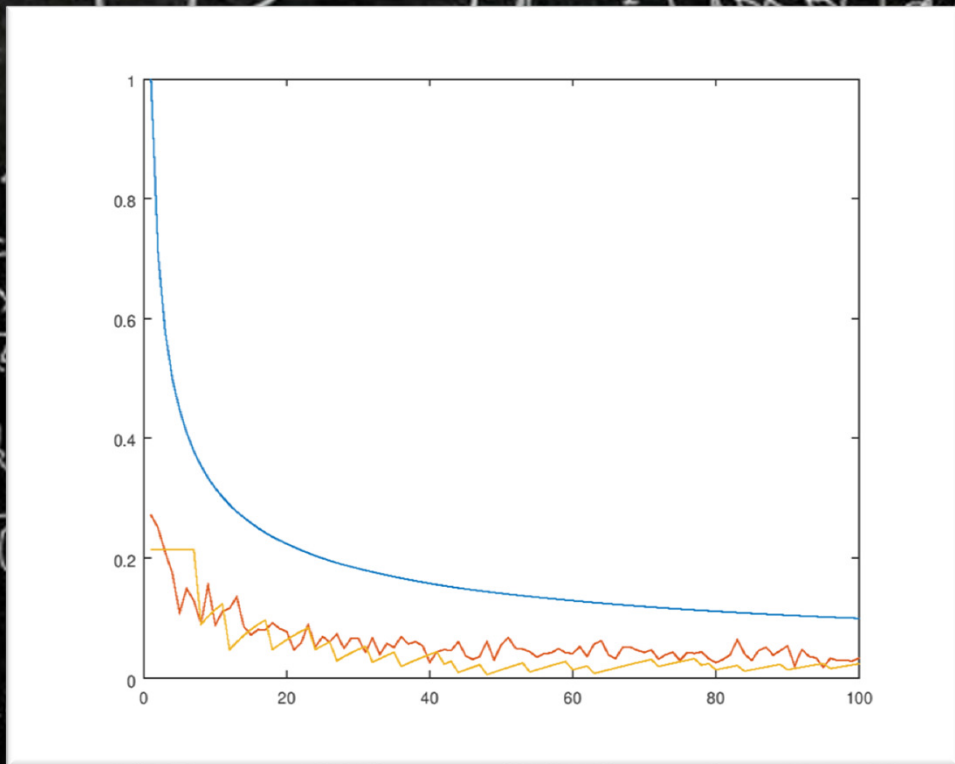
```
1 function [V] = CallValue (S0,K,T,r,Sigma,N,M)
2   h=T/M;
3   S=zeros (N,M+1);
4   S (:,1)=S0;
5   Z=zeros (1,N);
6   for i=1:N
7     for j=1:M
8       S (i,j+1)=S (i,j)+r*S (i,j)*h+Sigma*S (i,j)*sqrt (h)*normrnd (0,1);
9     endfor
10  endfor
11  for i=1:N
12    Z (i) = S (i,M+1)-K;
13    if Z (i) <0
14      Z (i)=0;
15    endif
16  endfor
17  V = exp (-r*T) *mean (Z);
18 endfunction
19
```

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Command Window Editor Documentation

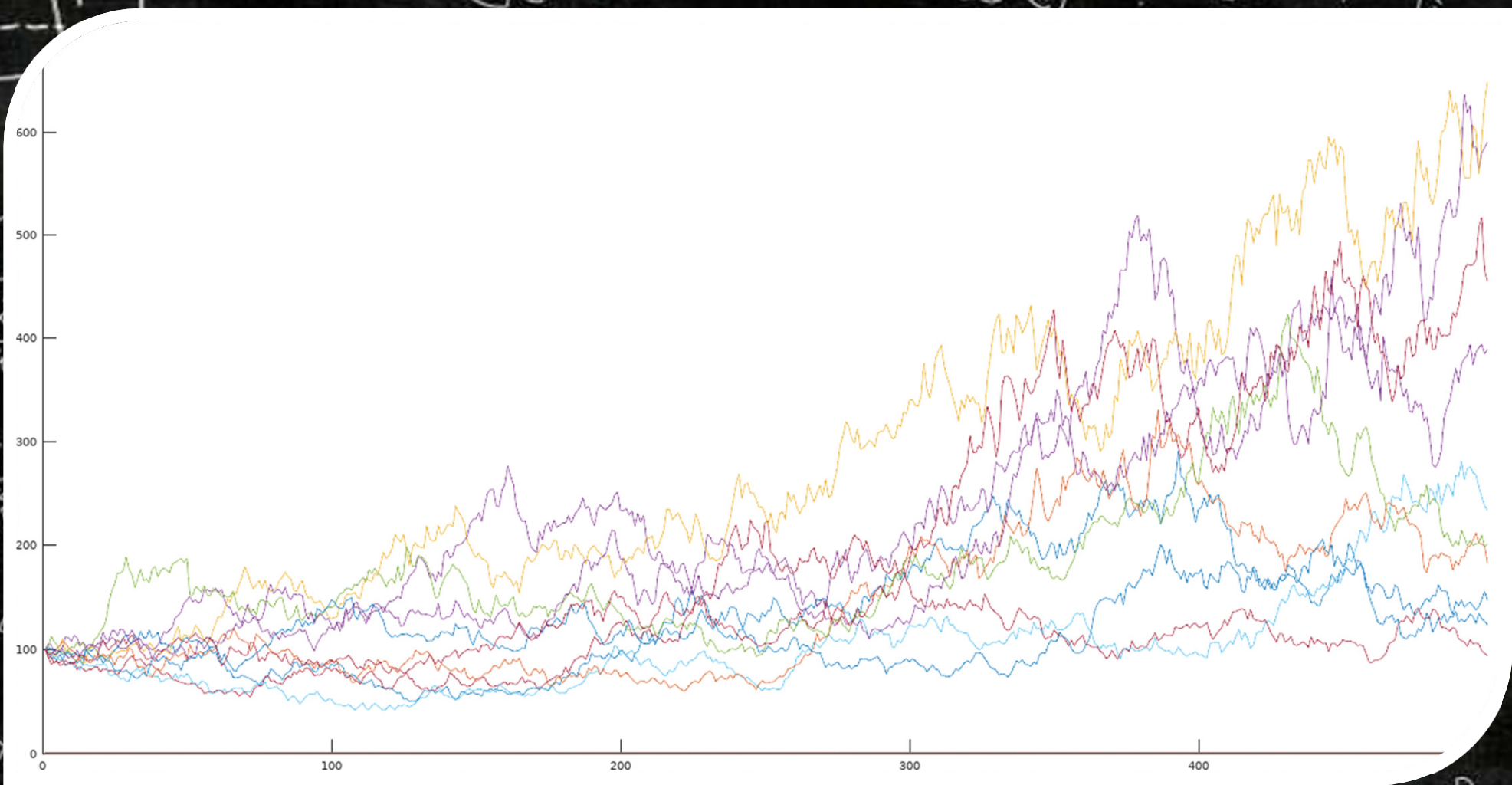
MC / QMC





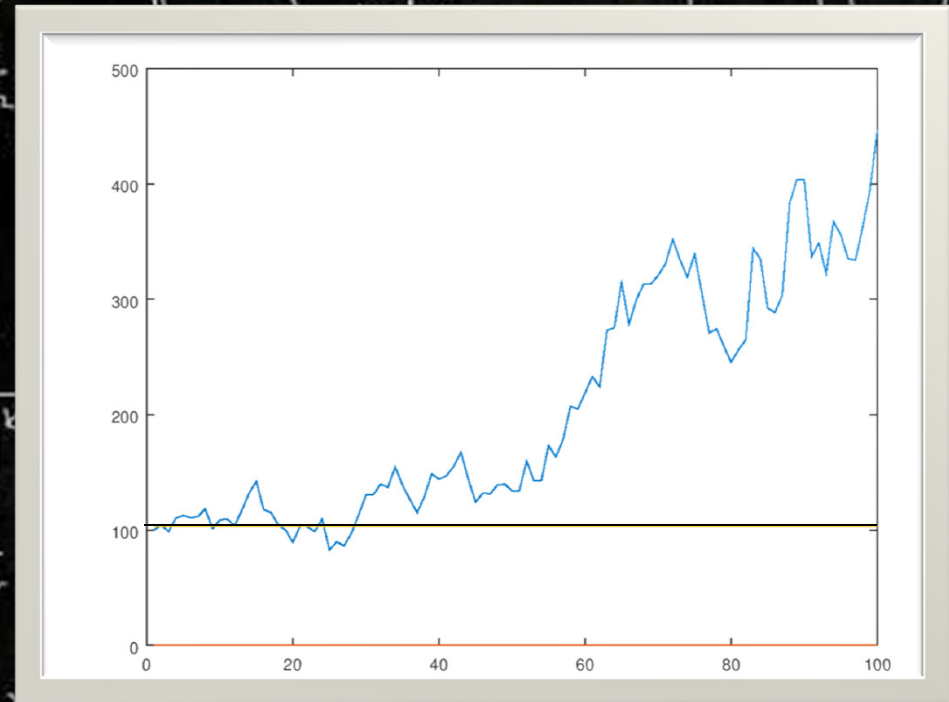
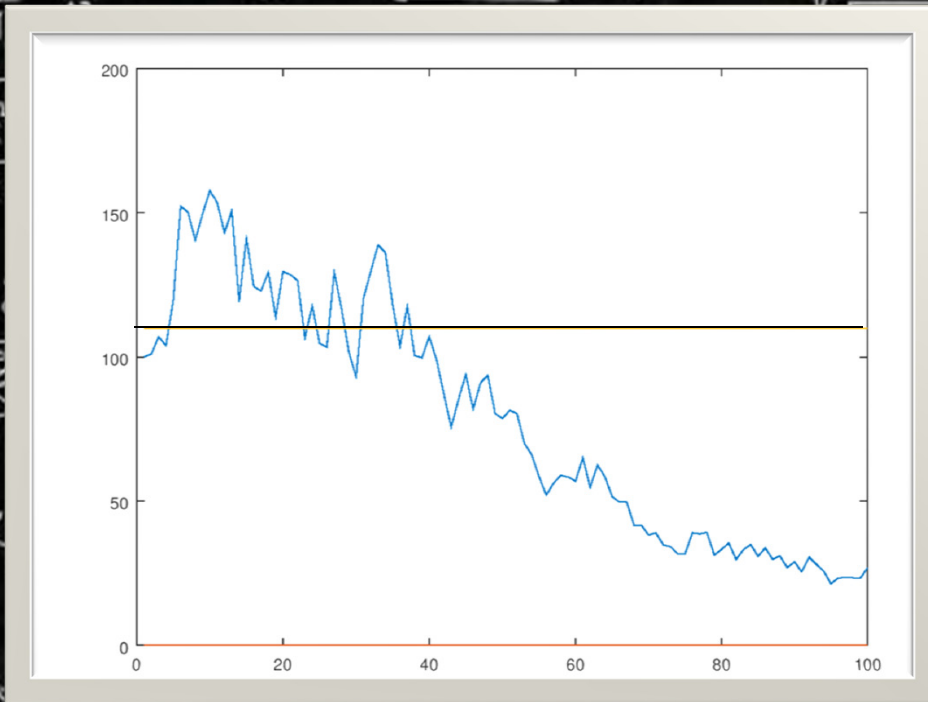
Handwritten mathematical notes on a chalkboard background:

- $\int_0^1 \sqrt{x^2+2} (x+1)^2 dx$
- $\sigma(x) = \sum_{j=0}^{\infty} a_j P_j(x)$
- $\sum_{j=0}^{\infty} f(x_j) \Delta x_j$
- $\frac{3}{u-2} \quad x \neq 2$
- $\frac{1}{\Delta x} \int_0^1 N_i[(1-\gamma)\theta_m^L + \gamma\theta_m^R]$
- $N_i \parallel x_i \mid a_i \mid \sigma_{\Omega}(1-\gamma)$
- $N_i \parallel \sigma_{\Omega}(1-\gamma)$



Finanzgrundlagen

$I = r_1, r_2$ Analogic System



Berechnung des fairen Preises

$$C(S, t) = S\Phi(d_1) - Ke^{-r(T-t)}\Phi(d_2)$$

$$P(S, t) = Ke^{-r(T-t)}\Phi(-d_2) - S\Phi(-d_1)$$

$$d_1 = \frac{\ln(S/K) + (r + \sigma^2/2)(T-t)}{\sigma\sqrt{T-t}}$$

$$d_2 = d_1 - \sigma\sqrt{T-t}$$

$$\Phi(x) = \int_{-\infty}^x \frac{1}{\sqrt{2\pi}} \exp\left(-\frac{z^2}{2}\right) dz$$