



# MatlabMakro

FB 02

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# Team



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# Das Projekt



INTERAKTIVE MITNUTZUNG VON MATLAB IN  
VORLESUNG UND ÜBUNG (PMAK)

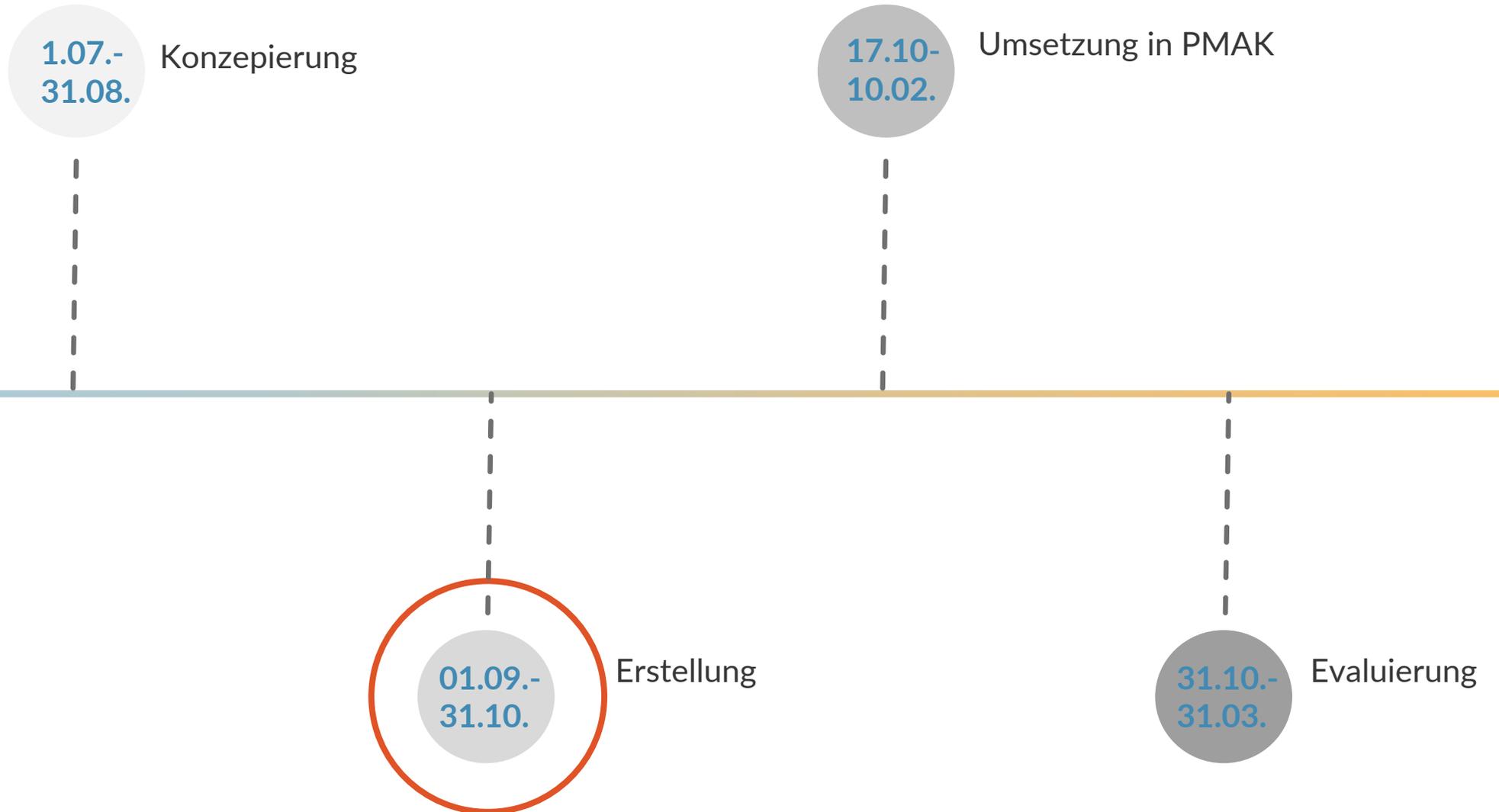


VERANSCHAULICHUNG VON ÖKONOMISCHEN  
KONZEPTEN, DYNAMIKEN UND DATEN UND  
ERSTER KONTAKT MIT PROGRAMMIEREN



ZIEL: MÖGLICHST NIEDRIGE HEMMSCHWELLE  
ZU QUANTITATIVE ERGEBNISSEN MIT DER  
SOFTWARE DER FORSCHUNG

# Projektplan



# Aktueller Stand der Dinge

```
main_script.mlx x +
I. This is a exercise in fitting a polynomial curve to stock data:
1 AMD_data = readtable('AMD.csv', VariableNamingRule='preserve');
2 INTEL_data = readtable('INTC.csv', VariableNamingRule='preserve');
3
4 amd_date = AMD_data.Date;
5 amd_high_value = AMD_data.High;
6 data_len = length(AMD_data.High);
7 vec_len = 1:data_len; %used for fitting
8
9 poly_deg = 2  ;
10
11 coef2 = polyfit(vec_len,amd_high_value,poly_deg);
12 pred2 = polyval(coef2,vec_len);
13
14 bool_int = ;
15
16 hold on;
17 title('Stock price fitting')
18 xlabel('Date');
19 ylabel('Euro');
20 plot(amd_date, amd_high_value);
21 plot(amd_date,pred2)
22
23
24 t1=datetime(2019,1,1,1,0,0);
25 t2=datetime(2023,1,1,5,0,0);
26 xlim([t1 t2]);
27 ylim([0 180]);
28
29 if bool_int == true
30     plot(INTEL_data.Date, INTEL_data.Low);
31     legend({'AMD', 'AMD fitted', 'Intel' }, 'Location', 'southeast')
32
33 else
34     legend({'AMD', 'AMD poly fitted' }, 'Location', 'southeast')
35 end
36 hold off;
37
38
```



# Aktueller Stand der Dinge

II. Next lets play around with the production function:

1. The change of the capital stock:

Production Function:

$$Y_t = F(K_t, L) = B_t K^\alpha L^{1-\alpha}$$

```
%Production Funticon
```

```
%Model coefficients
```

```
B = 1 ;  
alpha = 0.5 ;  
delta = 0.2 ;
```

```
%Labor and Capital values
```

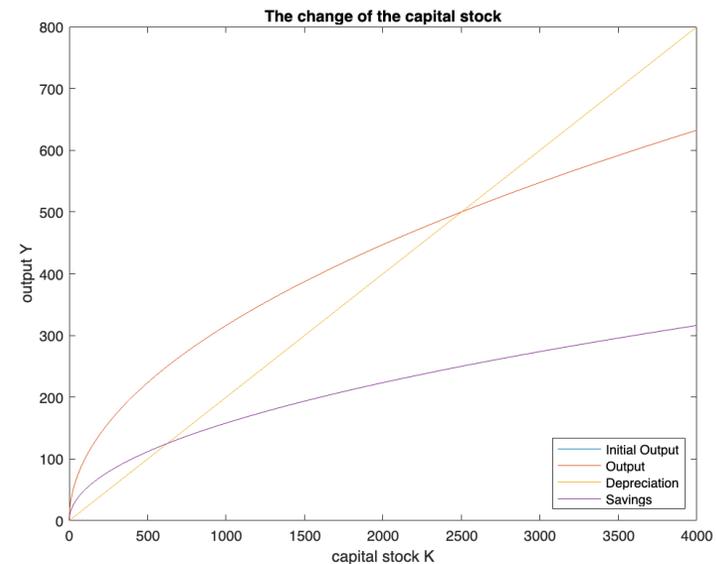
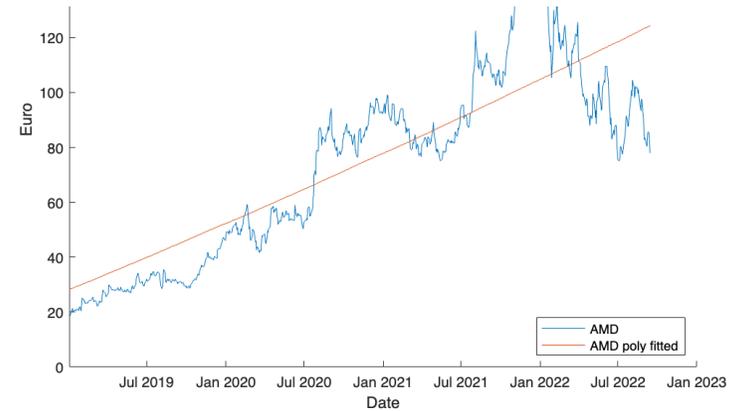
```
L_2 = 100 ;  
max_capital = 4000 ;  
K = 0:max_capital;  
depreciation = delta * K;  
saving_rate = 0.5 ;  
L_1 = 100;
```

```
%Calculate Output
```

```
Y_t_1 = B * K.^(alpha) .* L_1.^(1-alpha);  
Y_t_2 = B * K.^(alpha) .* L_2.^(1-alpha);  
savings = Y_t_2 * saving_rate;
```

```
%Plot the graph
```

```
plot(K, Y_t_1);  
title('The change of the capital stock')  
xlabel('capital stock K');  
ylabel('output Y');  
hold on;  
plot(K, Y_t_2);  
plot(K, depreciation):
```



Danke für Ihre Aufmerksamkeit!