

# Solution

- 1 **Example:** In the data file `data_01.txt` the results of the utility property measurements for 6 types of samples are obtained. Each type of sample was measured 10 times. Calculate the interval estimates of the mean value for each sample and plot on a graph.

# Solution

```
1 clear,clc,close all
2
3 %% data import
4 imp=importdata('data_01.txt') % imports data from a file into a structural element
5 data=imp.data; % extracting data from a structural element into a variable
6 txt=imp.txtdata % extraction of the header (text) from the structural element into ...
   a variable
7
8 %% intervalove odhady
9 [muhat, sigmahat, mucu, sigmaci] = normfit(data)
10 % muhat - estimate of the mean value
11 % mucu - upper and lower limit of confidence interval of mean value
12 % sigmahat - standard deviation estimate
13 % sigmaci - upper and lower limit of confidence interval of st. deviation value
14 er=mucu(2,:)-muhat; % vypočet delky "chybove usecky"
15
16 %% draw
17 bar(muhat); % drawing a bar graph
18 hold on
19 errorbar(muhat,er,'k+') % plotting the confidence interval
20 grid on
21 xlabel('samples'),ylabel('property [units]') % axis labels
22 xticklabels(txt) % labels of x
23 legend('mean estimates','95% confidence intervals \mu','location','best')
```

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