ETSMP
Stochastic Modelling and Processing

Indholdsfortegnelse

Introduction to Probability Theory

1.1 Lektion 06-11-2017

Problem 1.1.1 (Noter). *Find summen* $\frac{1}{1 \cdot 3} + \frac{1}{3 \cdot 5}$

Example 1.1.1 (Master Handbook Of Acoustics). *1.2*
$1 + 1 = 2$

Inkludering af MATLAB

1) This inline demo `for i=1:3, disp('cool'); end;` uses the `\mcode{}` command.

2) The following is a block using the `lstlisting` environment.

```
1  for i = 1:3
2  if i ≥ 5 && a ≠ b       % literate programming replacement
3  disp('cool');           % comment with some LaTeXin it: πx^2
4  end
5  [:,ind] = max(vec);
6  x_last = x(1,end) - 1;
7  v(end);
8  really really long really really long really really ...
       long really really long really really long line % ...
       blaaaaaaaa
9  ylabel('Voltage (μV)');
10 end
```

Note: Here, the package was loaded with the `framed`, `numbered`, `autolinebreaks` and `useliterate` options. **Please see the top of mcode.sty for a detailed explanation of these options.**

Probability Theory and Combinatorics

Discrete Random Variables

Continuous Random Variable

Transformations and Multivariate Variables

Stochastic Processes, Stationarity, Ergodicity

Cross and Autocorrelation, Power Spectral Density

Review Stochastic Processes

Introduction to Statistics, Estimators/statistics

Hypothesis test: Test of mean values, t-tests

Chi-Square tests, Binomial and Poisson distribution

Comparison of the Mean of Two Sample Sets

Linear Regression Models

Review Statistics