Title

Name

Date

1 Introduction to LaTeX

If you need to install latex on your computer you can download free software from
http://miktex.org/
You can type your latex–text using e.g.
http://www.winshell.org/
(There are various other editors / Latex–versions.)

How to write a report in LaTeX:

1. Download Miktex.
2. Download Winshell.
3. Download the files LaTeXExample1.tex and Literaturebib.bib from the website and save them in the same folder.
4. Open the file LaTeXExample1.tex and start typing your text. To compile the file press *F5* for Latex and *F6* for Bibtex (for the references). To view the file in dvi press *F7*. (For ps–files use *F8* to create the .ps file and *F9* to view it; for pdf–files use *F10* to create it and *F11* to view (it does not work with included ps/eps–pictures)). (You might need to install *Ghostview* for viewing ps-files and *Ghostscript* to transform ps–files to pdf–files.)

2 Some mathematical examples in LaTeX

2.1 Basic Notation

Let $(\Omega, \mathcal{F}, (\mathcal{F}_t)_{t\in\mathbb{R}}, \mathbb{P})$ be a filtered probability space....

Definition 2.1. *We define a new object....*

Theorem 2.2. *The following statement holds true: .....*

Proof. And now we prove it.... □

Remark 2.3.
- Some properties of X ....
- Moreover, we see that ...

And now we consider an example.

Example 2.4. 1. The same with numbers....

2. and again...

2.2 Some SDEs

In Section 2 we saw that.... Now we consider two stochastic processes X and Y satisfying

$$dX_t = X_t(\mu dt + \sigma dW_t), \tag{1}$$
$$dY_t = \tilde{\mu} dt + dB_t. \tag{2}$$

In formula (1), we find....

The same with one number

$$\begin{aligned} dX_t &= X_t(\mu dt + \sigma dW_t), \\ dY_t &= \tilde{\mu} dt + dB_t. \end{aligned} \tag{3}$$

In formula (3), we find ...

and without numbers

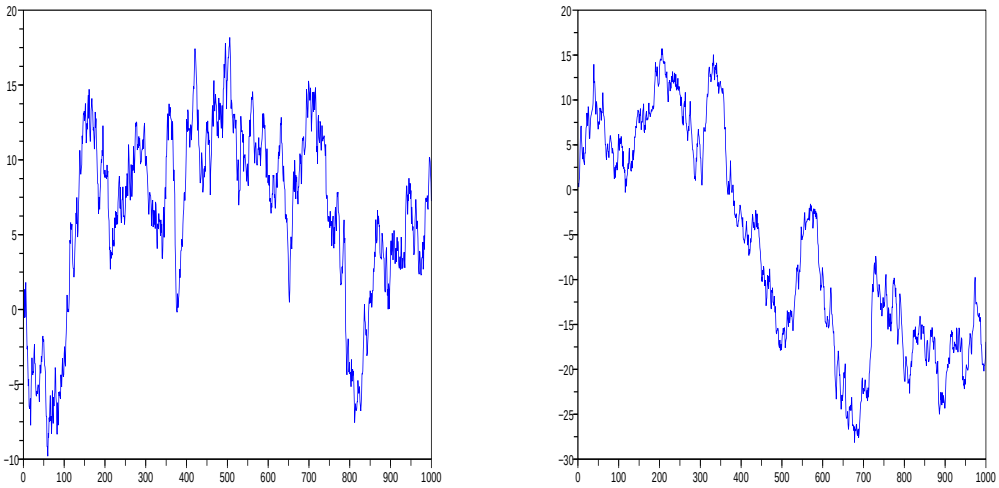
$$\begin{aligned} dX_t &= X_t(\mu dt + \sigma dW_t), \\ dY_t &= \tilde{\mu} dt + dB_t. \end{aligned}$$

Sometimes we are interested in sums $\sum_{i=1}^{n}$ or products $\Pi_{\nu=0}^{n}$ or integrals $\int_0^T f(x)dx$, or expressions such as $\frac{x+a^2-\pi+5}{\log(y)}$. Many indices $i_{j_\nu^2}$. An expectation $\mathbb{E}[X]$ or under a different measure $\mathbb{E}_{\mathbb{Q}}[X]$.

If you want to cite some results from a book use, e.g. [1] or more specific [1, p. 150]. Some more references: [3] and [2].

3 Some pictures

We see in Figure 1 and Figure 2....



(a) The first graph (b) The second graph

Figure 1: Here is the first picture (using subfigure).

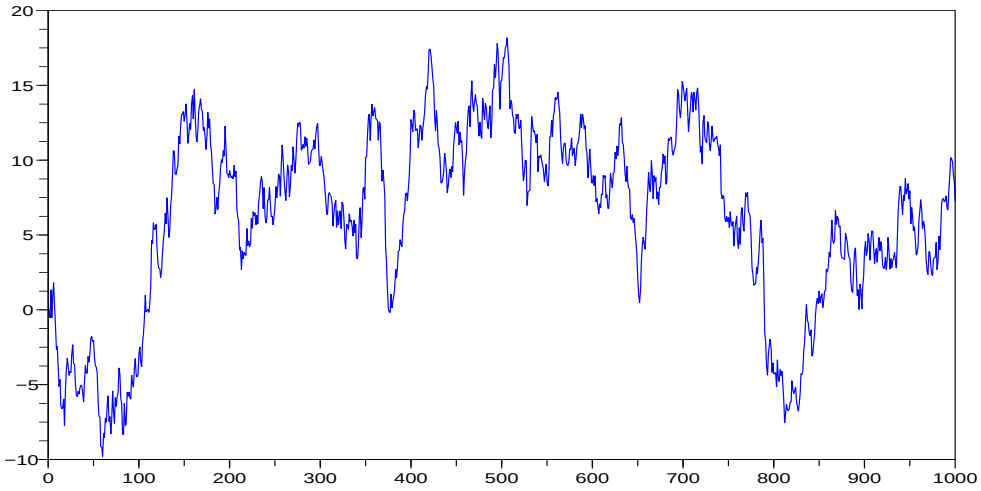


Figure 2: Here is the second picture.

References

[1] NH Bingham and R. Kiesel. *Risk-Neutral Valuation: Pricing and Hedging of Financial Derivatives*. Springer, 2004.

[2] M.H.A. Davis. Option pricing in incomplete markets. In *Mathematics of derivative securities*. Cambridge University Press, 1997.

[3] S.L. Heston. A closed-form solution for options with stochastic volatility with applications to bond and currency options. *Review of financial studies*, pages 327–343, 1993.