Write Your Title

Your Name

October 31, 2025

Abstract

Short abstract, max 100 words. Remember, max 3 page report, including references!

1 Introduction

- Problem statement

- Literature / References

- Remember proper citations, for example, use either **?** or (**?**) – whenever appropriate. Ask the lecturer or teaching assistants for help, if you need help in citing.

2 Model

- Give ODE, SDE, similar in Equation form, e.g.

$$X(t) \sim \mathcal{N}(0, C(t, t')), \tag{1}$$

where $X(t)$ is the unknown, with $t \in \mathbb{R}$, and it is a zero mean stochastic process with covariance $C(t, t')$.

- Clearly explain the target unknown, define all the objects, and the space the objects are in. If needed, refer to Equation (1), if needed (capitalise E).

- Write prior, likelihood and posterior distributions.

3 Methods

- Shortly describe the method you are using 4DVAR/3DVAR/EKF etc.

- Which packages and frameworks do you use....

4   Numerical Examples

- Make visualisations, use big enough fonts (about the same size as text itself).

- Include captions.

- Use vector graphics (if possible).

- Explain all the figures in the text.

- Write: "In Figure XX..." (capitalise F)

5   Conclusions

- Report on usability of the chosen packages/frameworks with respect to ease of installing, using etc.

- The results obtained

- Possible future studies, e.g. possibility to use in practical engineering or thesis work.

References

Lassi Roininen, Huttunen, J. M. J., and Lasanen, S. (2014). Whittle-Matérn priors for Bayesian statistical inversion with applications in electrical impedance tomography. *Inverse Problems and Imaging*, 8(2):561–586.

Lindgren, F., Rue, H., and Lindström, J. (2011). An explicit link between Gaussian Markov random fields: the stochastic partial differential equation approach. *Journal of the Royal Statistical Society: Series B*, 73:423–498.