

Creative title: Where we give results about things

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### Abstract

Write an abstract.

Keywords: fractals | quavers | carbonara

## 1 Introduction

We write some math for fun:

$$\int_{-\infty}^{\infty} \frac{1}{\sqrt{2\pi} |\Sigma|^{n/2}} \exp\left\{-\frac{1}{2}(y - \mu)^{\top} \Sigma^{-1} (y - \mu)\right\} dy = 1. \quad (1)$$

We encourage the use of the various macros defined in [ShorTeX](#), so do your best. It makes things easier to read, but also provides lots of necessary mathematics definitions that render nicely.

Be careful with things like KL divergence and conditional probability statements. I find that

$$\text{KL}(q \parallel p)$$

looks much better than

$$\text{KL}(q||p),$$

and I similarly prefer

$$Y \mid X \sim \mathcal{N}(X, \sigma^2) \quad \text{to} \quad Y|X \sim \mathcal{N}(X, \sigma^2).$$

Note that the reals are  $\mathbb{R}^p$ . There is also

$$\hat{\beta} = \operatorname{argmin}_{\beta \in \mathbb{R}^p} \frac{1}{2n} \|\mathbf{y} - \mathbf{X}\beta\|_2^2 + \lambda \|\beta\|_1.$$

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## 1.1 Cleveref

We prefer to use `cleveref` to get nice references to things. For example, you can say that Eq. (1) was printed in Section 1. No need to write out things like “Section”.

## 2 Some best practices

Some of these are taken from [Jacob Bien](#). Note the use of the `ShorTeX` `itemize` environment style below.

- Section titles should be all title case or all sentence case. Don’t mix and match.
- I prefer data set to dataset.
- I prefer data to be singular. There remains debate on this point. When you use the word “datum” in a sentence, then we can argue. Data is a mass noun, like “information”. We don’t say “How many data are enough?”, we say “How much data is enough.” Enough said.
- Terminology is lower case, unless it’s a person’s name: Nyström extension and lasso.
- Equations are parts of the sentence. Displayed equations almost always have a comma or period after. Very rarely is there a colon or comma *before* a displayed equation.
- Don’t start sentences with math (“ $\Sigma$  is the covariance of  $\mathbf{X}$ .”) or the name of a software package that’s lowercase, e.g., “`glmnet` is my favourite software”.
- Don’t use contractions.
- No need to put dollar signs around numbers: 12 versus \$12.
- DO put dollar signs around math:  $p$  not p.
- Use  $x \gg y$  not  $x >> y$ .
- Careful with parentheticals and references. Wrong: (see, e.g., [Akaike \(1973\)](#)). Right: (see, e.g., [Akaike, 1973](#)).
- Never use `eqnarray`, always use `align`. Note that `ShorTeX` makes `\[ \]` into an `align` environment, so you can just use that always.
- For editing purposes, it is much better if the text is hard-wrapped rather than soft wrapped.

## 2.1 Tables

Table 1 is a nice looking table. Strive for these.

Ingredient	Quantity
Fusili	100 g
Eggs	2
Salt	1 tsp
Guanciale	50 g
Pepper	$\frac{1}{2}$ tsp
Grated parmesan	$\frac{1}{4}$ c

Table 1: This is a nice looking table. It might make carbonara.

### 3 Discussion

We made amazing contributions to the world of musical fractal pasta (McDonald, 2017; Tibshirani, 2013). We use Natbib, so be sure to use (Stein, 1981) for parenthetical references. Or you can say, according to Hastie et al. (2009), we should strive to balance truth and lies.

### References

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