

# Exam check list

The following is a list of things I suggest that you check regarding your solution:

- **Quantify!** When possible, put numbers, errors, z-values, p-values, etc.
- Check that you have (tried to) answer all questions.
- Ensure that your errors are correct/“reasonable”, e.g. divided by  $\sqrt{N}$ .
- Check that you have calculated Chi<sup>2</sup> and p-value with comments, when possible.
- Make sure that you have described what you assume, use, and do.
  - Do you assume non-correlation? Equal errors? Gaussian errors?
  - Do you use error propagation formula, Central Limit Theorem?
  - What did you do? Show calculations, intermediate results, etc.
- Check that your PDF is (easily) readable to those correcting it.
- When fitting, write the fit parameters, and comment on them.
- Remember, that you can not prove a hypothesis... only reject it!
- When you don't have a solution, describe instead how you would get one.

Possible advice regarding work:

- Start out by reading the whole exam through in detail.
- Work out a quick-and-dirty solution, before longer solutions.
- Re-read the whole exam again Friday morning.

# Based on our experience...

Based on our experience from the problem sets, please consider:

Put Chi2, Ndof and p-value in figures AND in the text with COMMENTS.  
(Repeating myself here, but still...)

Write down functions you use/fit with, and put number of Degrees-of-Freedom.

Write down what type of fit you do: Chi2 or LLH (binned or unbinned).

Mention formulae used, and show larger calculations specifically (2nd eq. best):

$$P = \sum r^n (1 - r)^{N-n} \quad P = \sum_{i=1}^4 P_{binomial}(r, N = 4, p_{succes} = 1/6)$$

State if p-values are significantly, i.e. choose a significance level, and compare.

Get significant digits right! Possibly show many digits and then shorten correctly.

When generating random numbers according to function, plot function on top.

# Formats of exam solutions

Just to make it clear:

**The solution has to be submitted in PDF format!**

You are welcome to submit PDFs extracted from your Jupyter Notebooks, but  
**...it should be readable.**

In order to do so, StackOverflow is a great source:

<https://stackoverflow.com/questions/34818723/export-notebook-to-pdf-without-code>

1) hav hidecode.tplx i samme mappe som filerne du vil konvertere. hidecode.tplx skal indeholde koden:

```
((*- extends 'article.tplx' -*))

((* block input_group *))
  ((*- if cell.metadata.get('nbconvert', {}).get('show_code', False) -*))
    (( super() ))
  ((*- endif -*))
((* endblock input_group *))
```

2) OBS: Hvis du har brugt ERDA Jupyter's File -> Export Notebook as -> PDF, har du en notebook.tex fil i mappen. Slet den, ellers vil koden ikke blive skjult i PDF'en med denne metode.

3) Åbn en terminal I ERDA Jupyter via File -> New -> Terminal

4) Skriv i terminalen:

```
jupyter nbconvert --to pdf --template hidecode Example.ipynb
```

Hvor Example er navnet på din notebook-fil

5) Åbn din PDF, og tjek at koden er gemt. Hvis ikke, slet notebook.tex i mappen og kørs igen.

Tak til Oliver for "manual"

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**It is YOUR responsibility,  
that your solution is readable!**

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