Academic writing-instructions for final report

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Analysis of aerosols, air pollution and their sources in the Eastern Mediterranean 31.10.-10.11.2022

Final report

Each group prepares one final report
that is written in format of a scientific article!

Peer review done by your teachers
Final version returned latest at XX.XX?

Page limit: 15 including figures

Page 1:

- Title page starts with a title. Use one that is concise but informative.

  "Aerosol precursors and nanoparticle concentration decrease due to drought in the boreal forest"

- Title page has information about yourself:
  - Names in alphabetical order, affiliations, emails, group teachers with emails and group name

1. Abstract

Personally I leave this for the last section to write

- Abstract is a brief introduction of the topic. Max 1 page!
- No citations

- In reality:

1) Couple of sentences of introduction, e.g. why is it important to study this question.
2) Couple of sentences about e.g. what was done, with which instruments and what methods were used.
3) Main results in a couple of sentences.

2. Introduction

Personally I think this is the most laborious section

- The function of the introduction is to establish the context of the work that you report. At first, discuss the relevant primary research literature with reference citations and summarizing the current understanding of the problem you are investigating.

- In reality:
- Your introduction must answer these questions: "What were we studying? Why was it an important question? What did we know about it before we did this study? How will this study advance our knowledge?"

3. Methods and instrumentation

Personally I start writing from this section! Easy!

- Introduction of all methods and instruments used for the study (cited).

- In reality:
  - Field station description
  - Instrumentation used in details so measurements can be repeated
  - Statistical methods
  - Equation
  - Anything technical related to implementation of your work

Results and discussion

Personally I think this is the hardest but the most rewarding section!

- Here is where you answer your research questions!

- In the Results and discussion section, **present your results** and discuss them by:
  1) commenting on the results obtained
  2) interpreting what the results mean and
  3) explaining any results which are unexpected.
- Summarize your results in the text, drawing on the figures and tables to illustrate your points.

5. Conclusions

- This section will need to have several elements, including:

1. A brief summary of your key findings
2. The conclusions which you have drawn from your group work
3. Why your research is important for researchers
4. Recommendations for future research (strongly recommended)

6. Author contribution

- Specify your contribution in the group report.

“Tuija Jokinen conducted the measurement, Juho Aalto wrote the section about VOC emissions in the Hyytiälä forest and Tuukka Petäjä wrote the results section. All authors contributed to the commenting of the report, writing the introduction section and discussion part.”

7. Reference list / bibliography

- References have to be listed alphabetically at the end of the report under the first author's name.
- You can use e.g. a free program for reference managing:
  - Mendeley (www.mendeley.com)

Asmi E., Sipilä M., Manninen H. E., Vanhanen J., Lehtipalo K., Gagné S., Neitola K., Mirme A., Tamm E., Uin J., Komsaare K., Attoui M., Kulmala M., Results of the first air ion spectrometer calibration and intercomparison workshop, Atmos. Chem. Phys., 9 (1), 141-154, 2009. DOI: https://doi.org/10.5194/acp-9-141-2009

Fifth Assessment Report - Climate Change 2013, (available at http://www.ipcc.ch/report/ar5/wg1/), 4 Oct 2018.

General instructions:
Equations:

- Should be referred to by the abbreviation "Eq." and the respective number in parentheses, e.g. "Eq. (14)". However, when the reference comes at the beginning of a sentence, the unabbreviated word "Equation" should be used, e.g.: "Equation (14) is very important for the results: however, Eq. (15) makes it clear that..."

$$E = mc^2 \qquad \text{Eq. (14)}$$

General instructions:
How to cite:

- Example reference in text:

"Aerosol particles can influence climate directly and indirectly (Andreae and Crutzen, 1997, Dunn et al., 2004, IPCC 2013)."

"CI-APi-ToF is a mass spectrometer design for atmospheric trace gas measurements (Junninen et al., 2010, Jokinen et al., 2012)"

General instructions:
Tables:

Table 1. Total molar yields of ELVOC from selected terpene oxidation with uncertainty of -50/+100 % arising from calibration. The data in brackets represent ELVOC yields relative to the ozonolysis of α-pinene.

Yield	Limonene	α-Pinene	Myrcene	β-Pinene	Isoprene
Y (O_3), %	5.3 (1.56)	3.4 (1)	0.47 (0.14)	0.12 (0.035)	0.01 (0.003)
Y (OH), %	0.93 (0.27)	0.44 (0.13)	1.0 (0.29)	0.58 (0.17)	0.03 (0.009)

Figures:

A picture is worth a thousand words.

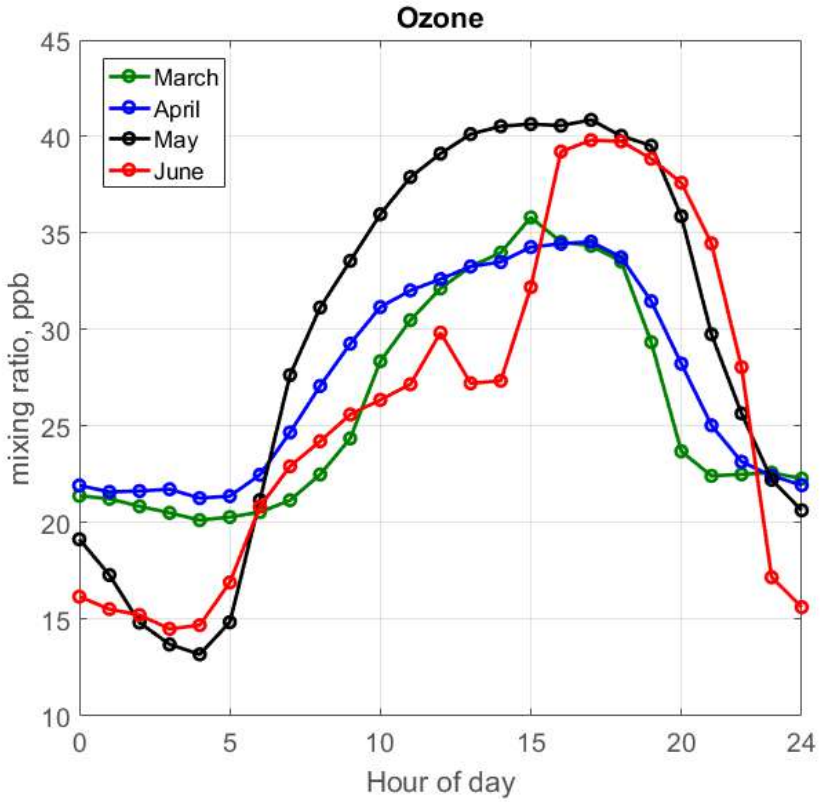

Figure 1. Diurnal pattern of ozone mixing ratio (ppbv) during the spring months in 2016. Observations are from ground level and measured at SMEAR II-station in Finland

- Legend
- XY-labels
- Font size
- Units
- Right amount of data
- Descriptive caption

Online instructions:

- You can also follow the instructions given in Atmospheric Chemistry and Physics for manuscript preparation:
- http://www.atmospheric-chemistry-and-physics.net/for_authors/manuscript_preparation.html