



# Data analysis of wind & SCADA data

## Lessons learned

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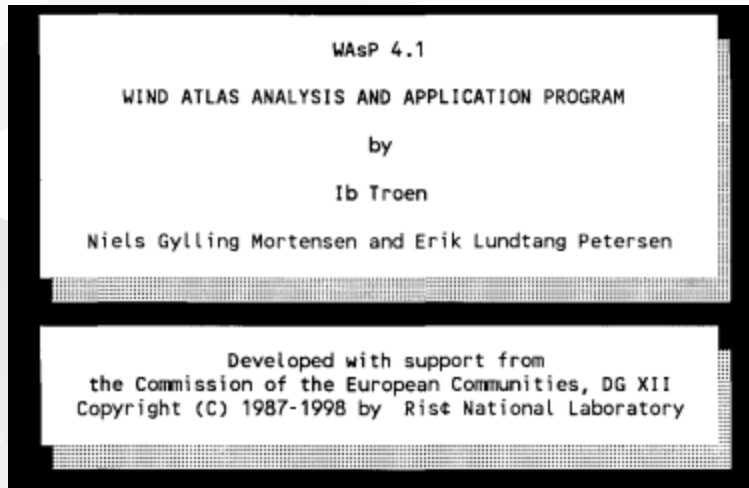
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# Disclaimer

“ 9 lessons learned... the *hard* way.  
Be cautious while listening to a presenter  
who has been so constant in failure

”

# Some background



*WAsP 4.1 on* MS-Dos 🧑

My tool journey:

- 2001: WAsP 4.1
- 2004: Wasp + EMD WindPro 2.0 + Excel
- 2007: SQL (MySQL)
- 2011: PHP
- 2014: R
- 2016: Windographer
- 2017: Python (pandas)

## **1 Use Excel for quick & dirty stuff**

- separate the logic and the data
- if you can kill a idea in 10 minutes, use excel!

## 2 don't re-invent the wheel

- use off-the-shelf tools first

### **Benefits:**

- focus your energy on what is important

### 3 Reproducibility, reproducibility, reproducibility

- don't modify source data
- make downstream process as reproducible as possible
- **success metric:** time for a new colleague to be up to speed

#### Benefits:

- ease peer-review: mistakes are spotted earlier, fraud is discouraged;
- the future you is the first beneficiary;
- force your team to have a clean organization, a sharp separations of concerns.

## 4 Version your logic

- use `git` enhanced with online tools like GitHub (Microsoft) or GitLab
- worth even for small proofs of concept

### Benefits:

- you can collaborate on very complex projects
- powerful issues / peer review tools

## 5 Version your computing environment too

- on your computer, use `docker` and/or package manager like `uv` to describe and version your dependencies

### Benefits:

- no more `"it works on my machine!"`

## 6 version your data

- it's as important as versioning your code
- using timestamps is a good start

### **Benefits:**

- you can trace results, trace back errors
- you can roll-back to correct an error, and restore a desired state

## **7 data engineering is software engineering**

- embrace the good practices of software engineering
- visit software craftsmanship or data science communities around you

### **Benefits:**

- your code will live longer

## 8 Set success metrics

- Spend time setting the right target
- Translate it into a business impact, even roughly

## 9 Play with the data

- start with an exploration of the data
- filter, rank it in different ways to create a "sense" of it