

Assignment 1

Interactive Data Visualization

SS 20

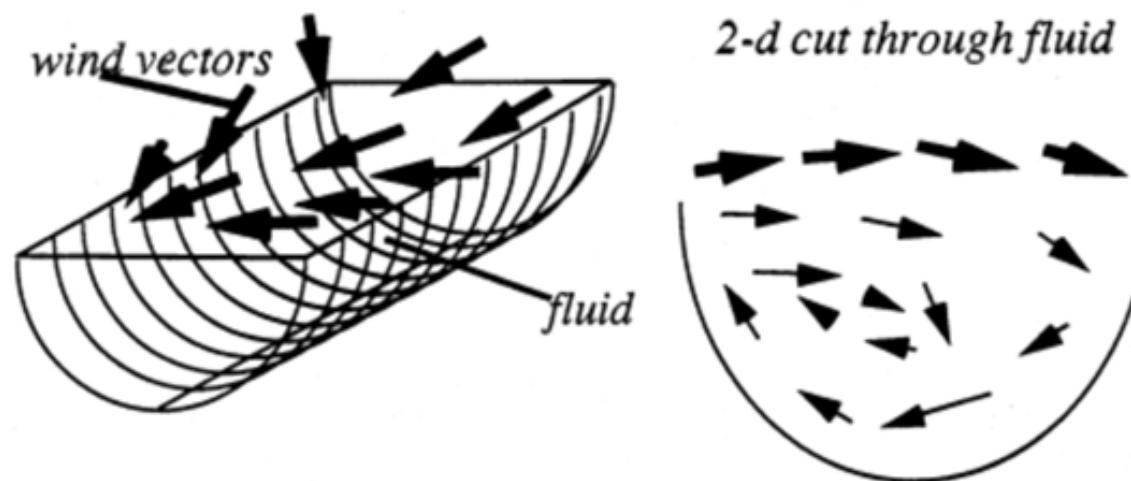
Sabrina Piasecki

Topic:

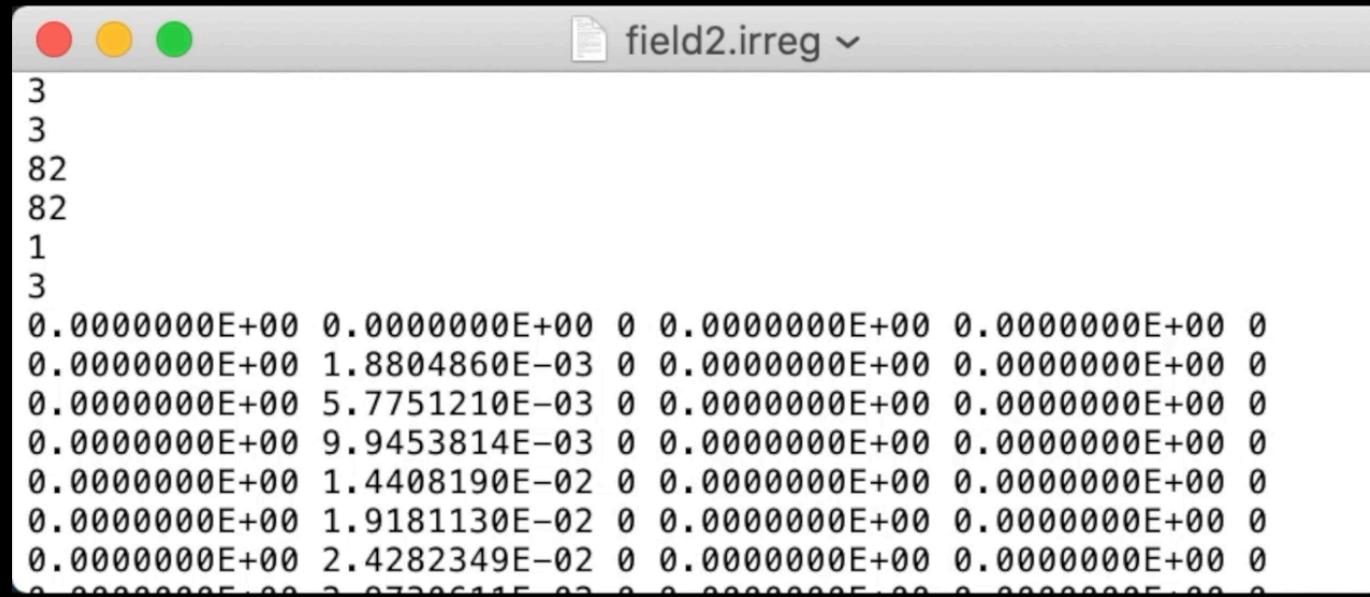
Flow Data

Given dataset:

- Movements of water particles caused by winds
- snapshot of water flowing through a channel
- 2D slice perpendicular to the length of the channel
- regular 82×82 grid
- data point: starting position (x,y,z) and relative movement (u,v,w)



Given dataset format:

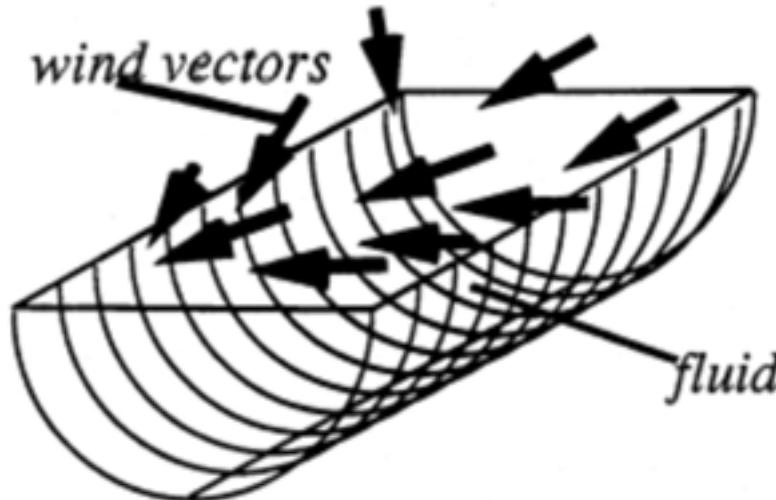


```
field2.irreg
3
3
82
82
1
3
0.000000E+00 0.000000E+00 0 0.000000E+00 0.000000E+00 0
0.000000E+00 1.8804860E-03 0 0.000000E+00 0.000000E+00 0
0.000000E+00 5.7751210E-03 0 0.000000E+00 0.000000E+00 0
0.000000E+00 9.9453814E-03 0 0.000000E+00 0.000000E+00 0
0.000000E+00 1.4408190E-02 0 0.000000E+00 0.000000E+00 0
0.000000E+00 1.9181130E-02 0 0.000000E+00 0.000000E+00 0
0.000000E+00 2.4282349E-02 0 0.000000E+00 0.000000E+00 0
0.000000E+00 3.0728615E-02 0 0.000000E+00 0.000000E+00 0
```

What can be dropped?
What do we need?



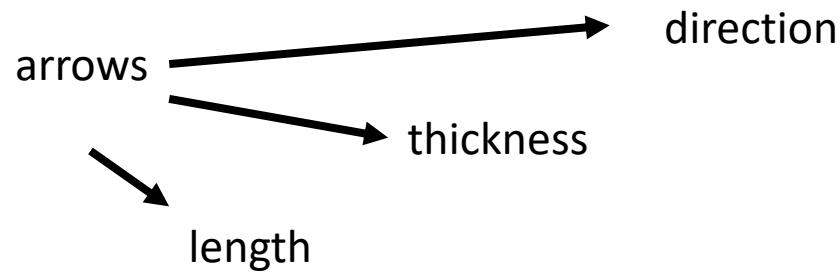
Sketch of a simple example:



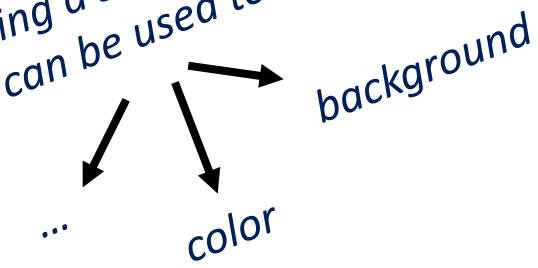
2-d cut through fluid



What is used to create a visualization?



Before creating a solution for assignment 1, think of what more can be used to create a good visualization?



What should your solution look like?

- Python
- Suggested viewer/user tasks to support:
 - Provide a visual overview of the data
 - Show symmetry in the flow
 - Allow effective visual identification of quickest and slowest movements without losing sight on the whole flow
- Make sure your solution is scalable and will also work with large data sets

Grading

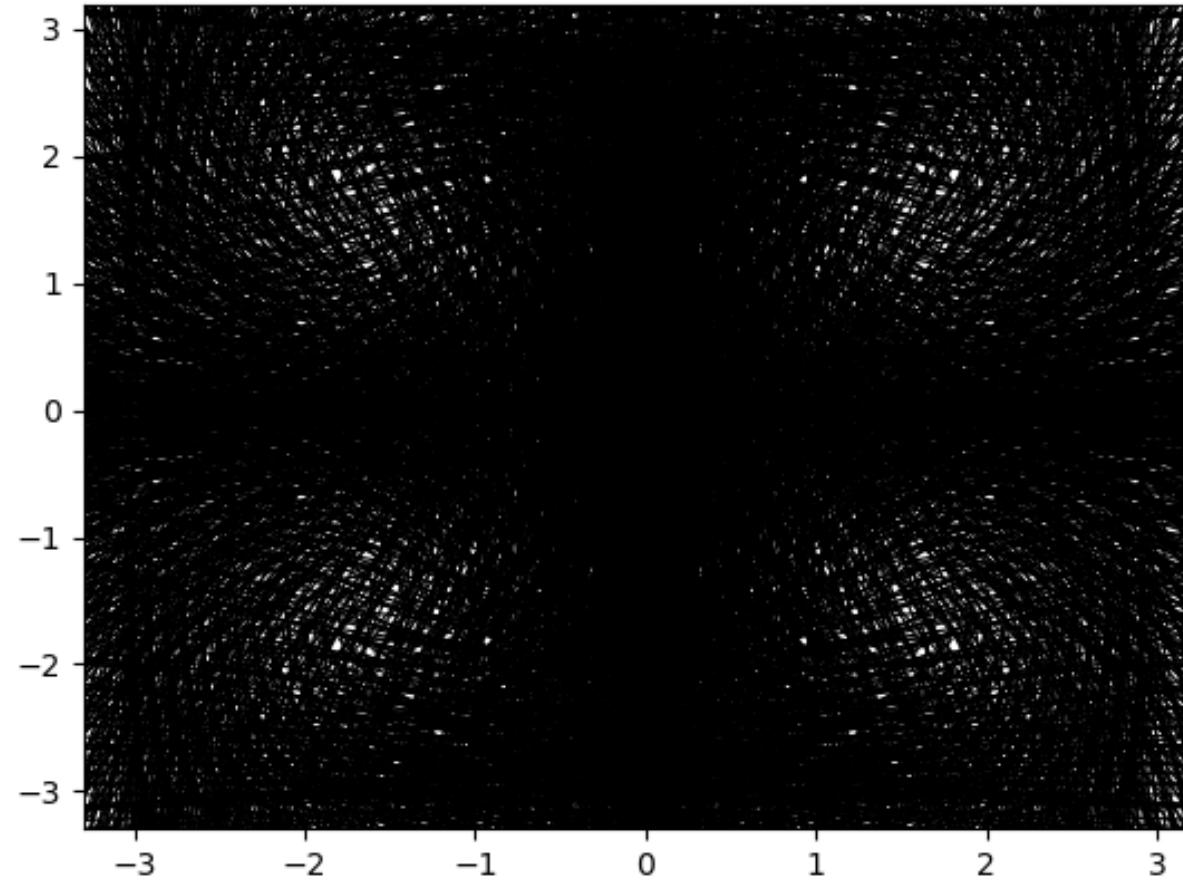
- Points depend upon the correctness of your solution
- 3 categories:

points	reason
0	no submission, no screenshot, no code, solution is not appropriated
5	acceptable solution, something important is missing
10	(very) good solution

- Special cases might lead to additional adjustments

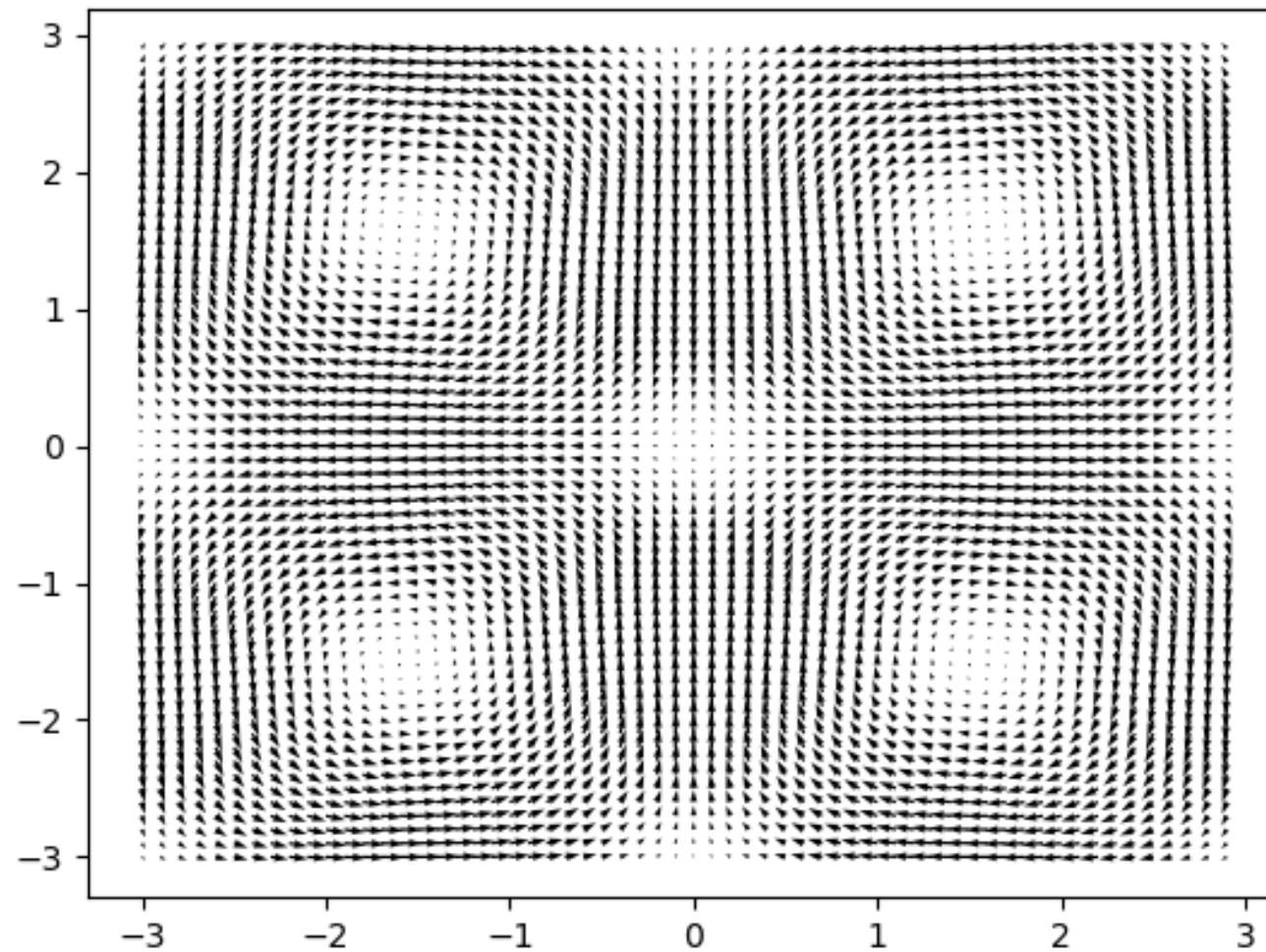
Example: Fictive Flow Data

Very bad solution



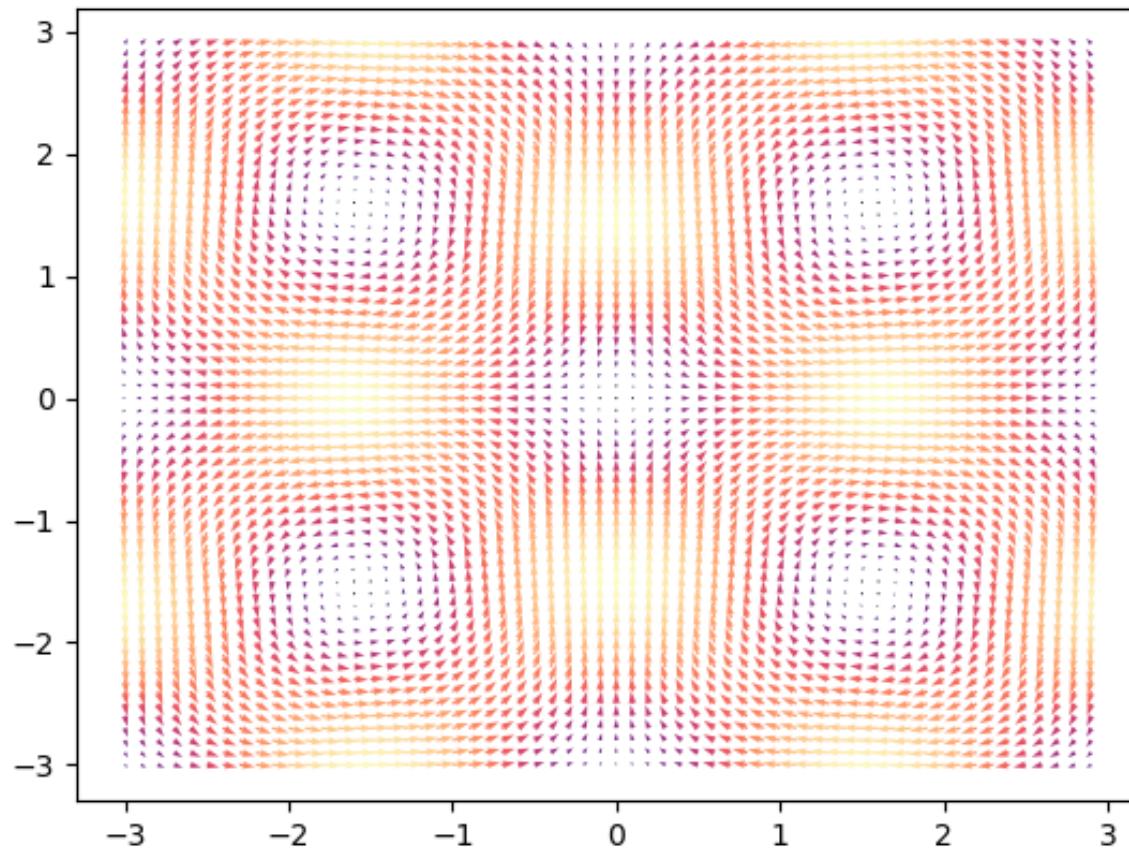
*... even though maybe all data is visualized
As you can see, you see nothing.*

Minimal solution



*... even though maybe all data is visualized
Legend for the arrow size is missing.*

Bit better than minimal solution



*... even though maybe all data is visualized
Legend for the arrow size and/or color is missing.*

Good support for the user

