

This is how most mathematical proofs are written.

Giving a mathematics talk

Part II: communicating mathematics

Franco Vivaldi

November 16, 2018

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This very seldom happens.

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With increased experience, the number of slides will normally decrease, as one learns how to talk around limited information.

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- A bibliography slide is appropriate for complex presentations, which survey several works.

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Develop your talk by following this idea.

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 - the answer
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 - the answer to an easier/related question.

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How can we achieve this?

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Mini-explanations could also be written on the board.

Expository devices

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- Proofs: give only sketches/ideas.

Make your language essential

We investigate the structure of regular motions for a class of invertible maps on a finite space, with emphasis on the realisability of various cycle lengths, and related issues of computational complexity. Unlike for dynamics on manifolds, where “regular” usually denotes zero metric entropy, on a finite space the situation is less clear. For instance, the character of the motion may depend on the choice of the topology.

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Do not read from slides!

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Identify highlights

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On a **finite space**: ?

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- Does the answer depend on the choice of topology?
- All orbits are periodic; what are their periods?

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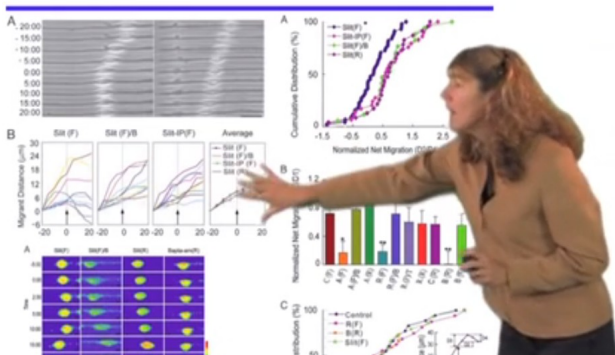
Period function: $\mathcal{T}(x) \stackrel{\nabla}{=} \mathcal{T}(x, x)$.

Using images

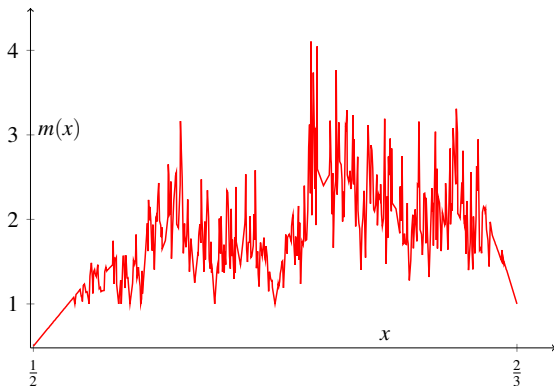
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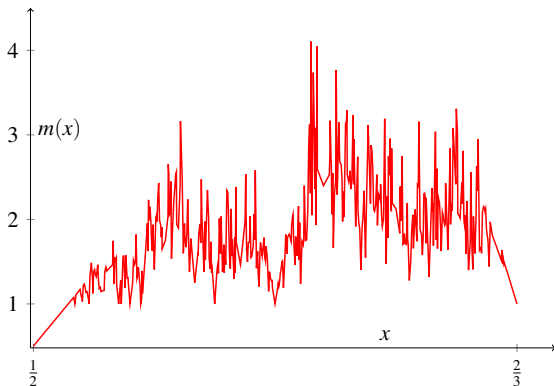
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The limit function

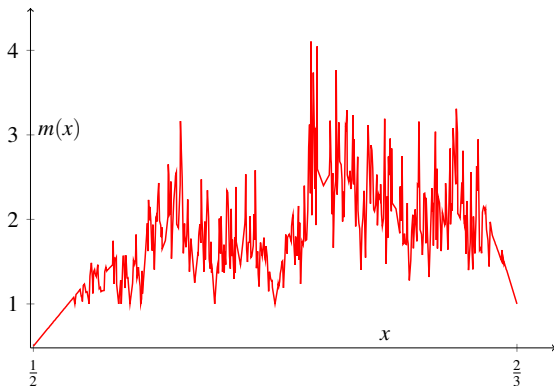


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Define axes first

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Explain the features of the plot

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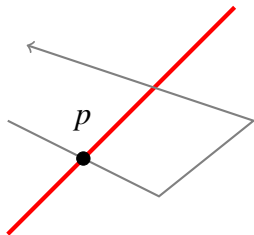
The first command draws lines (and many other things), the second draws solid geometrical objects, the third places \LaTeX input on the plot.

Using Tikz

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\begin{tikzpicture}[scale=0.5]
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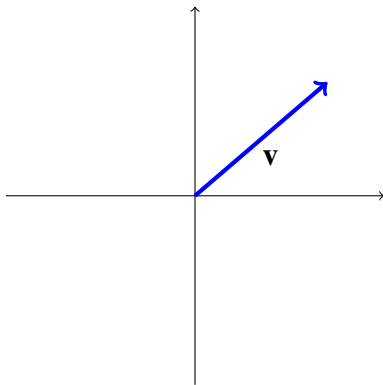
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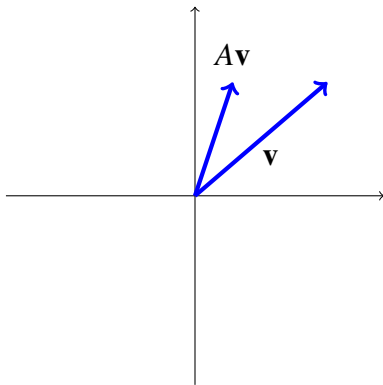
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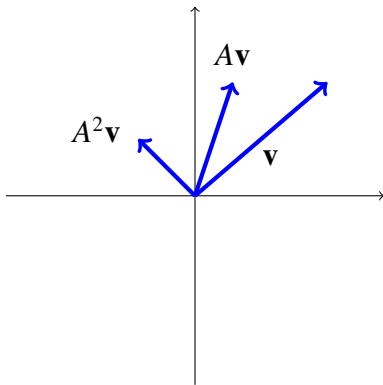
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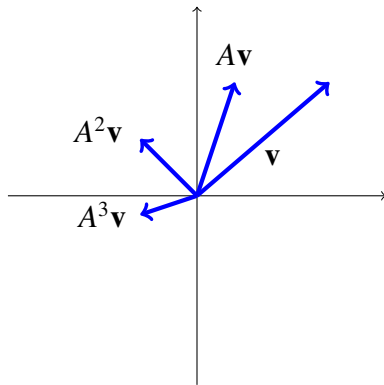
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The icon is then displayed when needed.

Let us consider again the action of the matrix A on a vector.

Recalling information

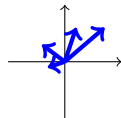
Unlike with whiteboard presentations, an electronic presentation is intrinsically **sequential**.

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Multi-column display

To display material on two (or more) column, use the `columns` environment.

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```
\begin{columns}
\column{0.7\textwidth}
Let us consider again the action ...
\column{0.3\textwidth}
\begin{tikzpicture}[scale=0.15]
...
\end{tikzpicture}
\end{columns}
```

Practice makes perfect

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- Practice thoroughly the first two-three slides.

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- Practice delivering your talk on time.

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[Run a spell-checker on your BEAMER document.]

On the day

- Nervousness makes people speed-up.

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- Force yourself to go through the first couple of slides **slowly**:

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- Force yourself to go through the first couple of slides **slowly**:

You will end up going at the right speed.

Stage skills



Stage skills



- Do not fold your arms

Stage skills



- Do not fold your arms
- Step forward; walk across stage

Stage skills



- Do not fold your arms
- Step forward; walk across stage
- Show interest in the audience; make eye contact

Resources

Tikz: https://www.sharelatex.com/learn/TikZ_package

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How to give a good talk (the first of six videos):

<https://www.youtube.com/playlist?list=PL4BBD6139D06369C4>

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How to give a good talk (the first of six videos):

<https://www.youtube.com/playlist?list=PL4BBD6139D06369C4>

How to give a bad talk:

<https://www.youtube.com/watch?v=Abo7uqaltOU>