



**Barcelona  
Supercomputing  
Center**  
*Centro Nacional de Supercomputación*



# 11. Storytelling

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# Storytelling

- Storytelling = Narrativa
- Técnicas que operan detrás de cualquier tipo de historia
- Narración **estructurada** de una serie de hechos y acciones llevadas a cabo por uno o más personajes
- Técnica de comunicación aplicada en áreas diversas para crear un vínculo emocional con la audiencia
- Aplicación en áreas diversas para sobresalir.

## Qué tiene que ver conmigo?

- Se pueden contar historias con datos
- Técnicas útiles para comunicación en general
- Herramientas para dirigir el interés y conectar con la audiencia
- Storytelling + visualizaciones, maximiza el impacto en la comunicación de datos.

[https://www.ttandem.com › blog › como-usar-el-storytelling-en-el-marketing](https://www.ttandem.com/blog/como-usar-el-storytelling-en-el-marketing)

Cómo usar el storytelling en el marketing - ttandem

El **storytelling** es una estrategia de **marketing** que consiste en crear historias que emocionen y conecten con nuestra audiencia. El objetivo es que se asocie el ...

[https://www.snsmarketing.es › blog › storytelling-marketing](https://www.snsmarketing.es/blog/storytelling-marketing)

### Storytelling: Qué es y cómo usarlo en marketing - Agencia SEO

2 ago 2017 — En el artículo de hoy os contamos qué es el **storytelling**, porqué es bueno para tu negocio y cómo usarlo de cara al **marketing**.

[https://blog.hubspot.es › marketing › ejemplos-storytelling](https://blog.hubspot.es/marketing/ejemplos-storytelling)

### 12 ejemplos de storytelling que han hecho historia (y qué ...)

20 feb 2020 — El **storytelling** es una herramienta muy poderosa e indispensable, no solo para novelistas, sino también para los especialistas en **marketing** y ...

 [https://hbr.org › 2020 › 10 › storytelling-can-make-or-break-your-leadership](https://hbr.org/2020/10/storytelling-can-make-or-break-your-leadership)

### Storytelling Can Make or Break Your Leadership - Harvard Business R...

It's how you inspire an audience and lead an organization. Whether you need to win over a colleague, a team, an executive, a recruiter, or an entire conference audience, effective **storytelling** is...

 [https://ideas.darden.virginia.edu › storytelling-in-business-engaging-stories](https://ideas.darden.virginia.edu/storytelling-in-business-engaging-stories)

### Storytelling in Business: How to Create Engaging Stories

Communication Leadership & Management 15 April 2022 Storytelling in Business: How to Create Engaging Stories Insights from Brian Moriarty **Storytelling** is a crucial skill that leaders use in a variety of **business** situations. Accomplished leaders employ **storytelling** to improve interpersonal relationships, communicate strategy and build culture.

 [https://hbr.org › 2014 › 03 › the-irresistible-power-of-storytelling-as-a-strategic-business-tool](https://hbr.org/2014/03/the-irresistible-power-of-storytelling-as-a-strategic-business-tool)

### The Irresistible Power of Storytelling as a Strategic Business Tool

The Irresistible Power of **Storytelling** as a Strategic **Business** Tool Business communication The Irresistible Power of **Storytelling** as a Strategic **Business** Tool by Harrison Monarth March...

 [https://www.indeed.com › career-advice › career-development › storytelling-in-business](https://www.indeed.com/career-advice/career-development/storytelling-in-business)

### Storytelling in Business: How To Draft a Captivating Story

3 Feb 2023 · **Storytelling in business** is the process of telling a story, rather than just listing facts when communicating with current or potential customers. It helps businesses stand out from their competitors, providing their customers with a memorable storyline.

 [https://executive.berkeley.edu › thought-leadership › blog › storytelling-business](https://executive.berkeley.edu/thought-leadership/blog/storytelling-business)

### Storytelling in Business | UC Berkeley ExecEd

29 June 2022 · Stories can be used to explain technical details, demonstrate a process, communicate benefits, spread ideas, connect with people, and help an audience to clearly see (and feel) why they should choose your brand or offering over another. To this end, a good story can include details like:

rias

historias utilizando s.

storias ganan ...

na técnica de **marketing**

orporativo

g personal o corporativo.

e marketing ...

narrativa cada vez más



## Data Analyst

Wallapop

Barcelona, Catalonia, Spain (On-site)

35 school alumni

3 weeks ago

role preferably for a web/mobile company

- Excellent statistical knowledge, especially concepts related to A/B testing
- Proficiency in SQL
- Experience working with reporting and data visualization tools like Looker, Tableau or Power BI
- Product and business acumen
- Great data visualization with well-structured **storytelling**



## Analytics Engineer

SeQura

Spain (Remote)

- Provide and extract insights and actionable recommendations with the purpose of helping the business units to make the best decisions
- Real time analytics, alert dashboards and **storytelling** with data
- Contribute to the development of the Data Visualization Platform
- Communicate solutions and present them to both business and technical stakeholders



## Senior Data Scientist

PepsiCo

Barcelona, Catalonia, Spain (Hybrid)

1 mutual connection with the hiring team

Promoted

development.

- Business **storytelling** and communicating data insights in business consumable format. Fluent in one Visualization tool.
- Strong communications and organizational skills with the ability to deal with ambiguity while juggling multiple priorities
- Experience with Agile methodology for team work and analytics 'product' creation Fluent in Jira, Confluence



## Software Engineering Lead (Full Stack) - BCG X

Boston Consulting Group (BCG)

Madrid, Community of Madrid, Spain (Hybrid)

47 school alumni

Promoted

### Job Requirement:

- Bachelor's / Master's degree in computer science engineering/technology or equivalent
- Excellent communication skills and **storytelling**



## Power BI Specialist (m/f/d)

DEHN digital solutions GmbH

Spain (Remote)

Actively recruiting

Promoted · Easy Apply

### Key Responsibilities

- Develop and maintain Power BI data models, reports, and dashboards connecting to the cloud data warehouse (Azure Synapse) which is collecting data from various sources such as SAP ERP and Microsoft Dynamics CRM as per the DEHN standards
- Communicate trends, patterns, insights, findings, and recommendations to non-technical stakeholders using data visualizations and **storytelling**



## Data/Python Engineer Intern

TomTom

Madrid, Community of Madrid, Spain (Hybrid)

Your profile matches this job

Promoted · 20 applicants

- You are fluent in English
- You have programming experience with Python and SQL
- You have experience working with the main python libraries for data processing (pyspark, pandas, numpy,...)
- You have experience with data visualization (**storytelling**) (e.g., dash, streamlit)
- Being familiar with Microsoft cloud computing (Azure & Databricks)

### What We Offer

- Excellent communication skills, both written and oral - comfortable recommending and presenting solutions to senior managers.
- Proficiency in querying complex data structures using SQL.
- Excels at data **storytelling** and visualization.
- Experience with multiple BI tools a plus, especially IBM Cognos, PowerBI, Tableau.
- Tableau REST/JS API experience is a plus.



## Business Intelligence (Tableau) Developer ESP

Teladoc Health

Barcelona, Catalonia, Spain (Hybrid)

11 mutual connections with the hiring team

Promoted · Easy Apply



## Data & AI Presales Engineer - Spain

Fujitsu

Greater Madrid Metropolitan Area (Hybrid)

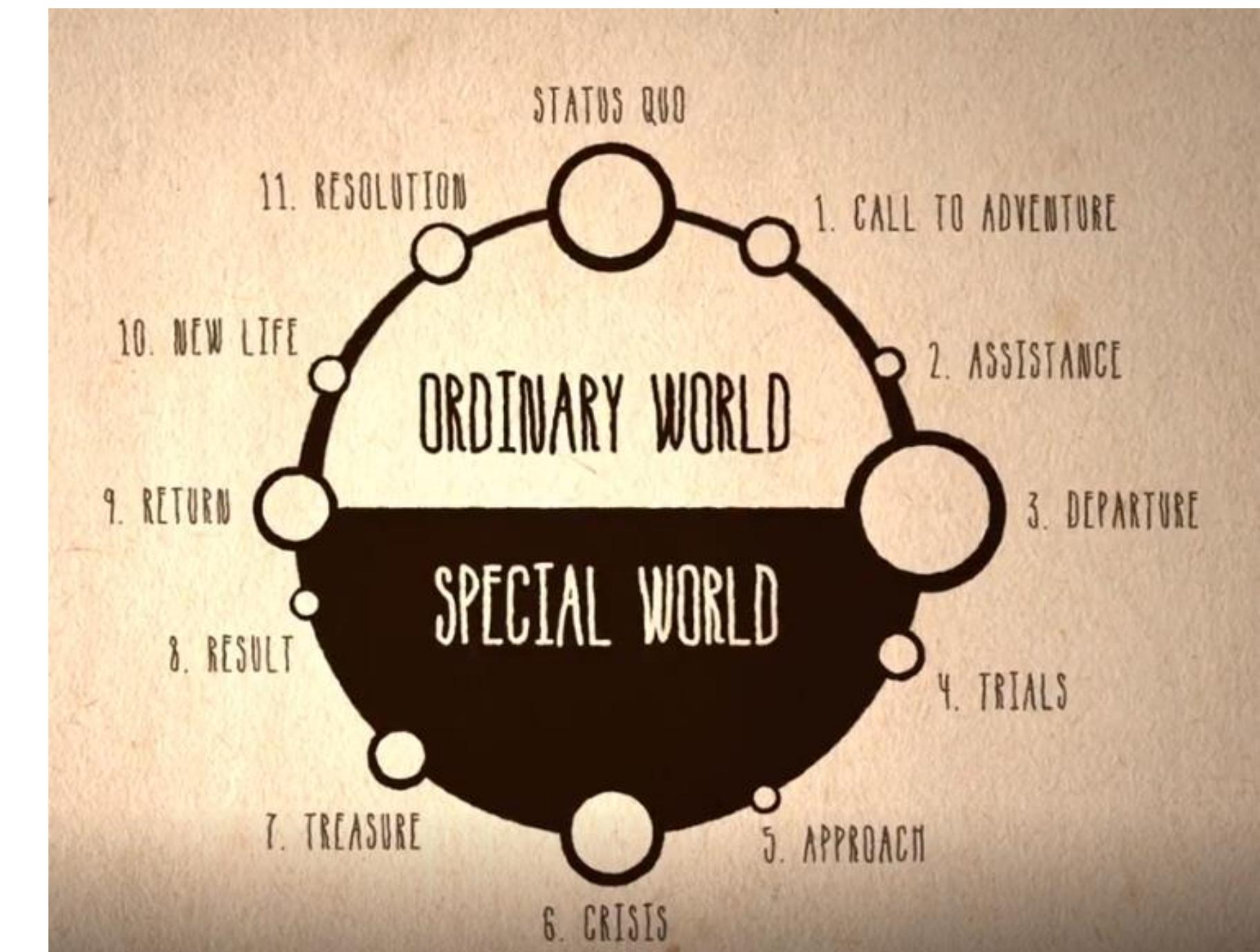
1 mutual connection with the hiring team

Promoted · Easy Apply

**Would you like to be a key part of our growth-oriented organization? Do you enjoy designing and building the **storytelling** of end-to-end AI and Data solutions? Do you have the capacity to handle a lot of information at the same time? Are you customer oriented and have really good communication & presentation skills? If so, we are looking for you to join our Data Intelligence and AI team in Spain!**

# Story

- Story- Narración **estructurada** de una serie de hechos y acciones llevadas a cabo por uno o más personajes
- Good story / well told (Robert McKee). Algo que vale la pena contar / Los medios usados para involucrar profundamente a la audiencia y, en última instancia, recompensarla con una experiencia significativa y conmovedora
  - Comunicar una idea envuelta en emoción=Memorable
- Las historias tienen características universales:
  - **El viaje del héroe.** What makes a hero?  
[https://www.ted.com/talks/matthew\\_winkler\\_what\\_makes\\_a\\_hero?utm\\_campaign=tedspread&utm\\_medium=referral&utm\\_source=tedcomshare](https://www.ted.com/talks/matthew_winkler_what_makes_a_hero?utm_campaign=tedspread&utm_medium=referral&utm_source=tedcomshare)

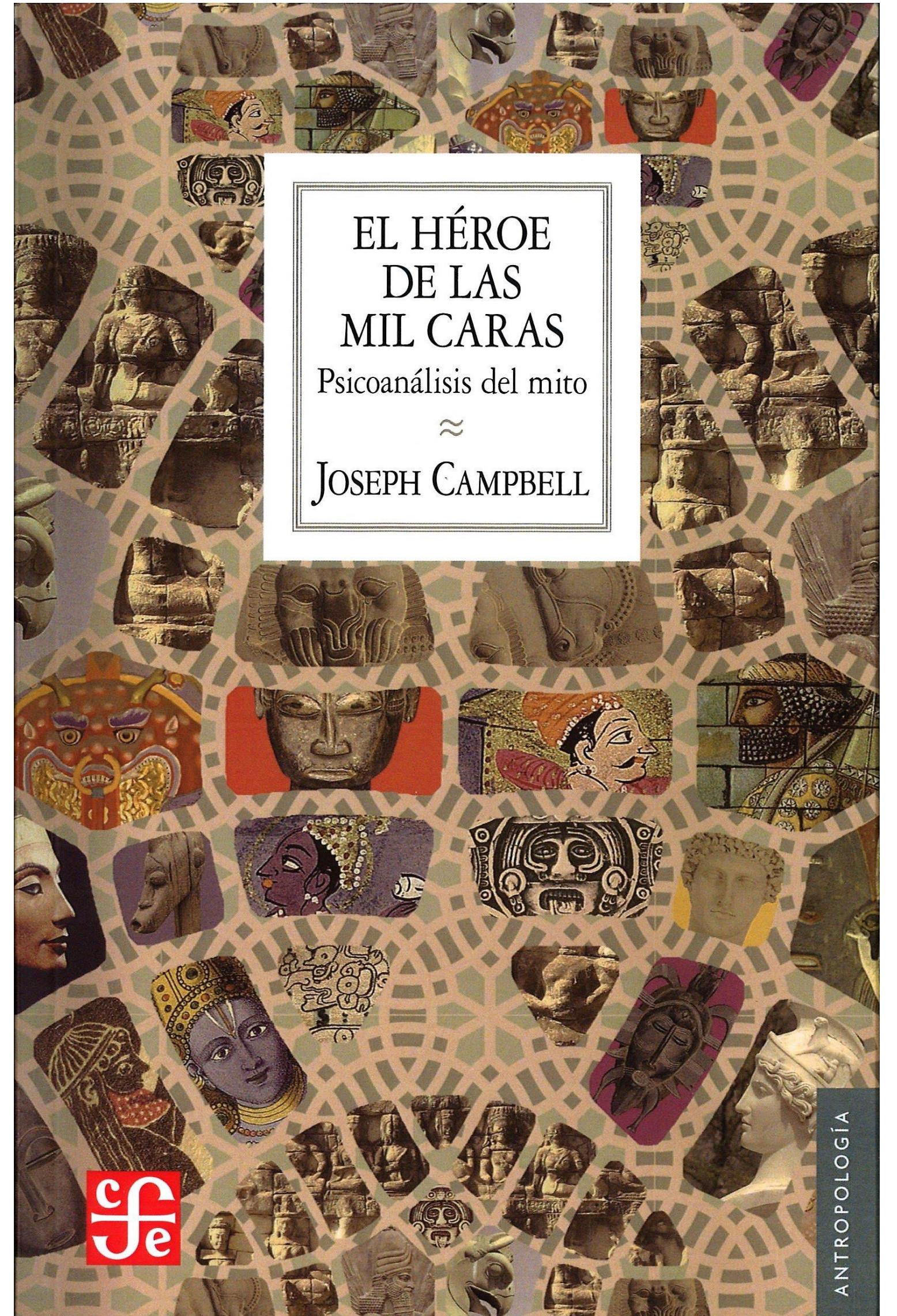


What makes a hero? Kirill Yeretsky

# Story

## El viaje del héroe

- El héroe de las mil caras, Joseph Campbell
  - Mitos comparten una estructura común fundamental: el monomito
  - “El viaje del héroe”
  - “*El héroe inicia su aventura desde el mundo de todos los días hacia una región de prodigios sobrenaturales, se enfrenta con fuerzas fabulosas y gana una victoria decisiva; el héroe regresa de su misteriosa aventura con la fuerza de otorgar dones a sus hermanos.*”
- Estructura con gran influencia.
- Variaciones y adaptaciones, por ej.:
  - Dan Harmon's story Circle <https://youtu.be/RG4WcRAgmZY>

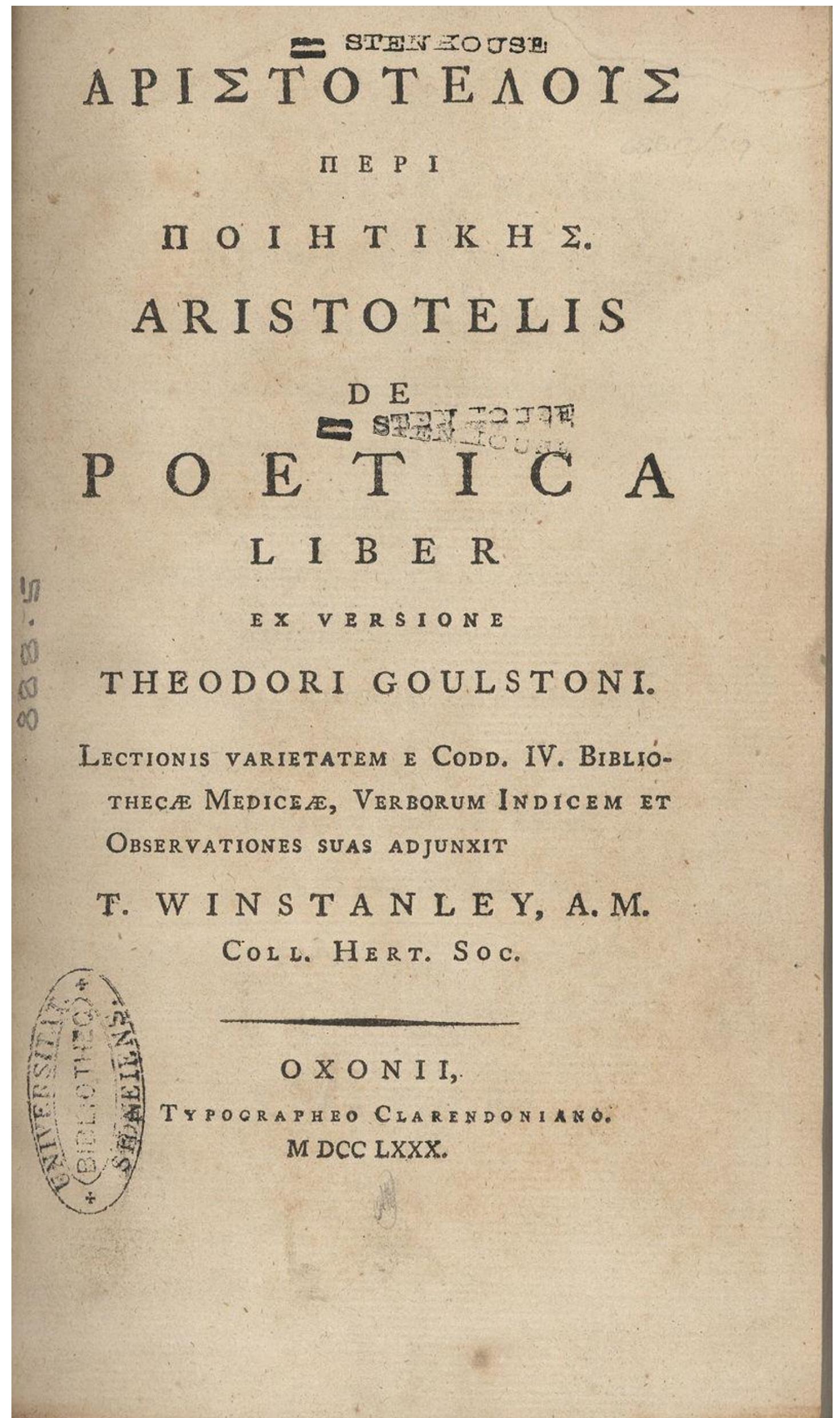


The magical science of storytelling | David JP Phillips

<https://youtu.be/Nj-hdQMa3uA>

## Estructura

- Aristóteles: Estructura clásica para tragedia en 3 actos (introducción-nudo-desenlace)
- Desarrollado como: planteamiento – conflicto - resolución
  - 1. Presentación del personaje y su mundo
    - Inciting incident -> Conflicto
  - 2. Esfuerzos por resolver el conflicto / Cambio
    - Climax
  - 3. Resolución
- Las transiciones están marcadas por situaciones de conflicto que generan tensión
- Otras estructuras (5 actos, story circle, ...)
- La estructura en tres actos sirve como modelo para comunicación en general
- El **conflicto** y la **tensión** son una parte integral de las historias y clave para mantener la atención



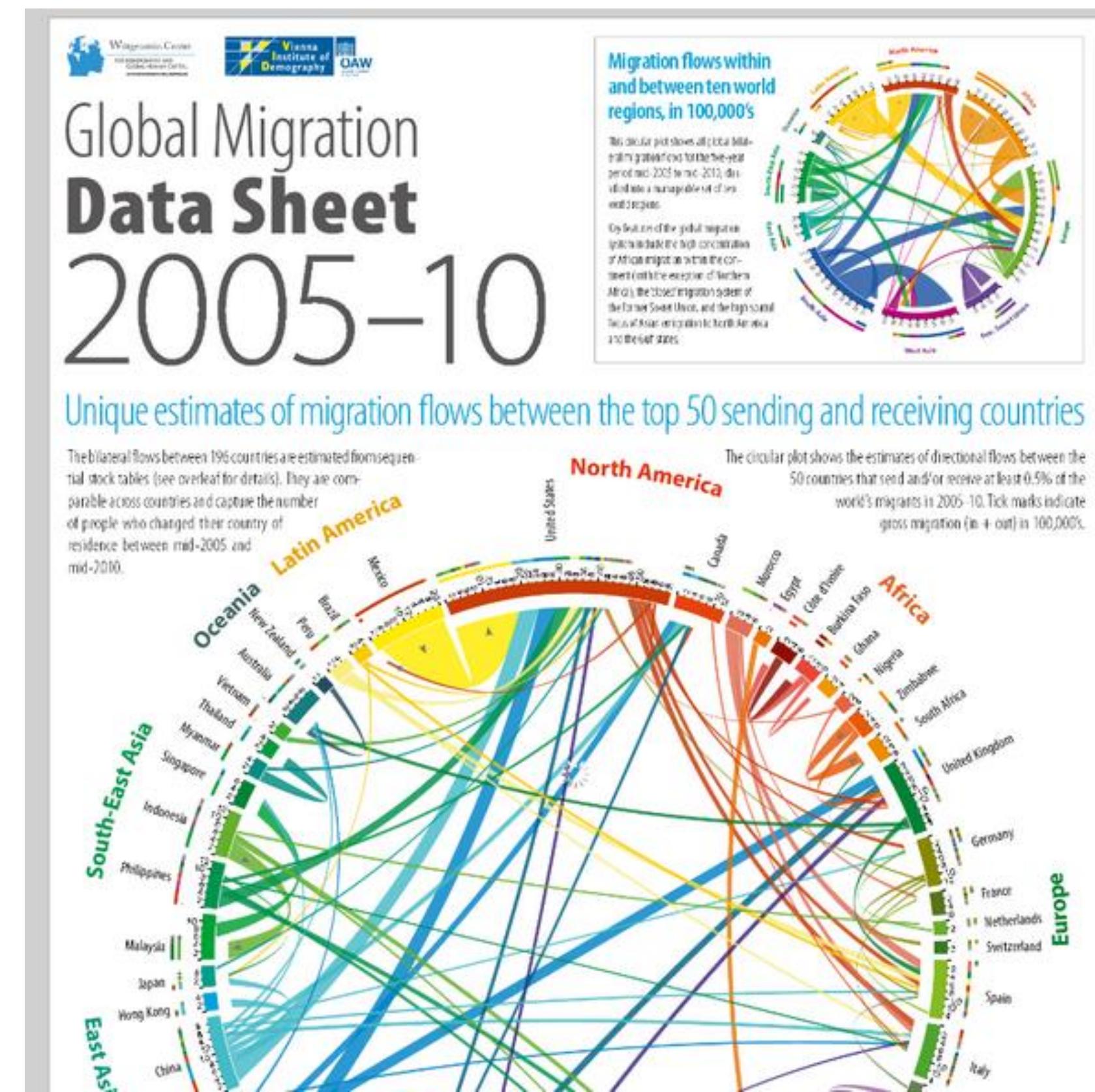
# Porqué utilizamos narrativa

- Una historia puede provocar emociones (intriga, empatía...) con las que segregamos hormonas (dopamina, oxitocina, endorfinas,...) que maximizan la atención o ayudan a crear un vínculo con la historia/personaje
  - Para atraer y mantener la atención de una audiencia
  - Para transmitir un mensaje de forma memorable a través de la emoción
- Elementos que se pueden aplicar a otras formas de comunicación: por ej., presentaciones en público.
  - Podemos incluir humor, intriga, tristeza, etc. Dramatizar narración.
  - Principios de la narrativa son aplicables a una presentación.

## Data viz

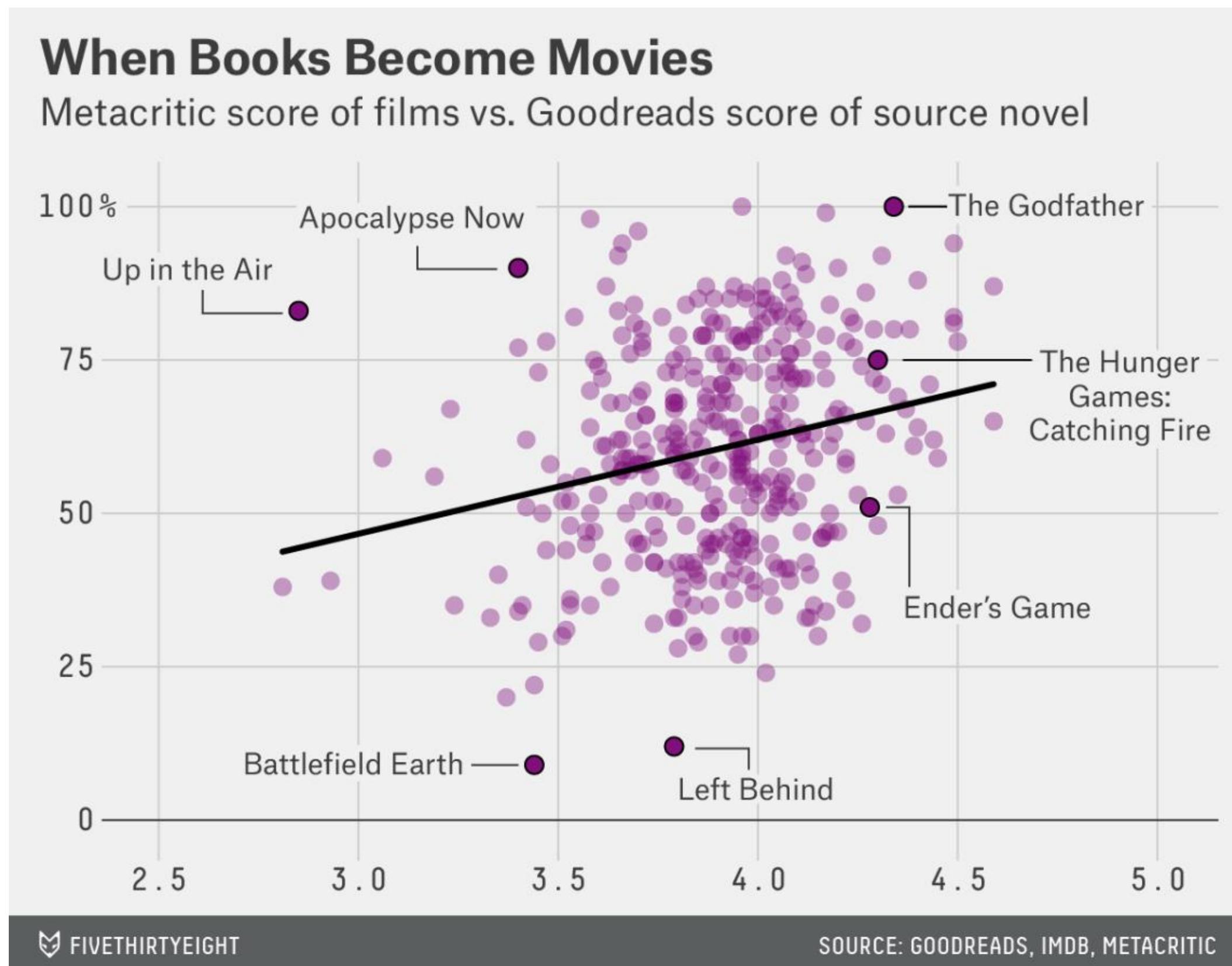
- Storytelling como herramienta para dirigir el interés y conectar con la audiencia
- Modelo para comunicación en general / Estructura y técnicas
- Aplicables a una narración usando gráficas (y otros elementos)

¿Hace falta siempre contar una historia con datos?



¿Hace falta contar siempre una historia?

¿Son/deberían ser todas las visualizaciones una historia?

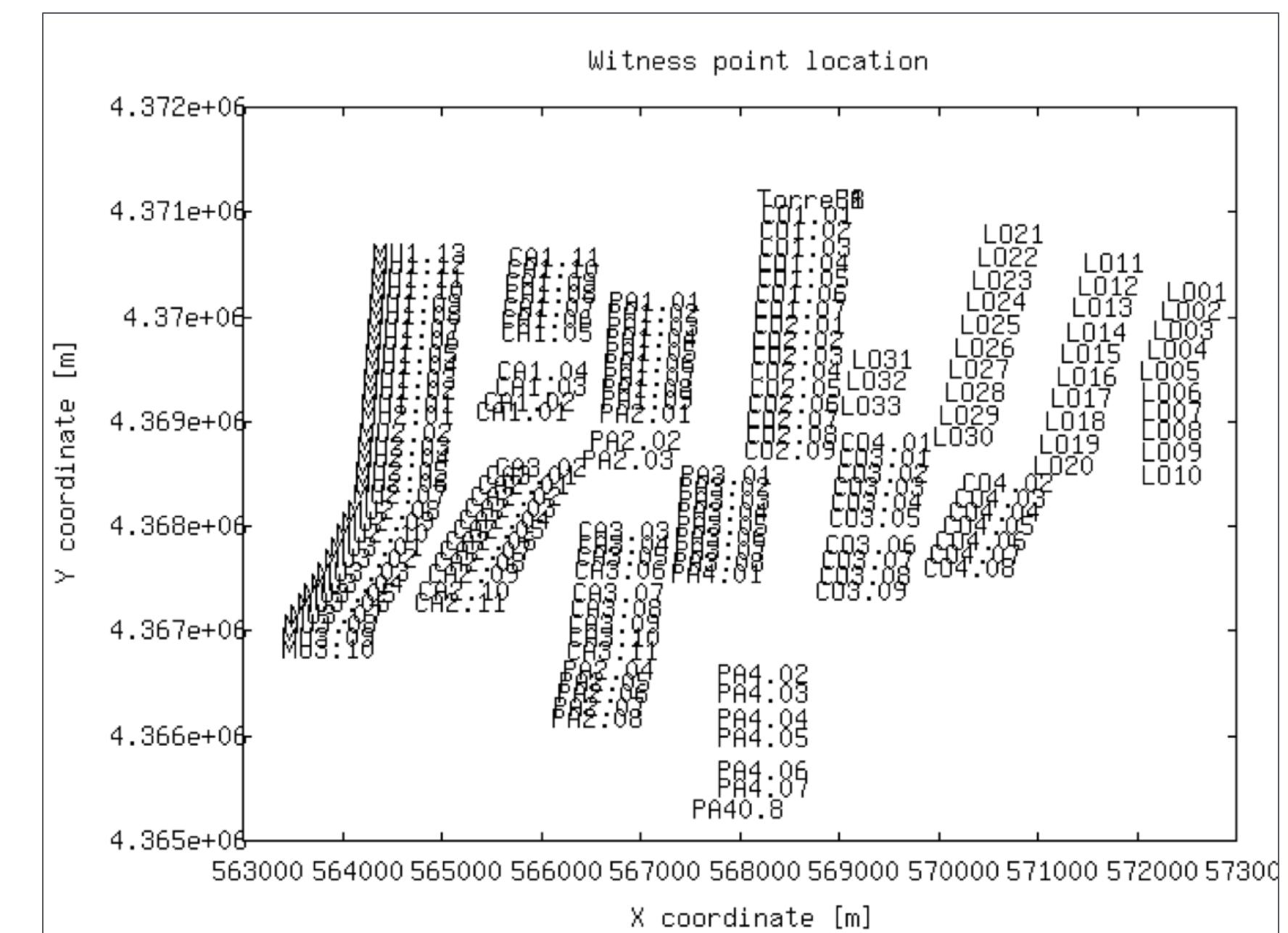


## No tiene que ser una historia necesariamente

- Hay varias estrategias para comunicar con datos:
  - **Anotación.** Texto y marcas que ayuden a interpretarla
  - **Narración.** Anotaciones conectadas en una secuencia lógica
  - **Historia.** Una narración que contenga drama/conflicto para obtener una respuesta emocional

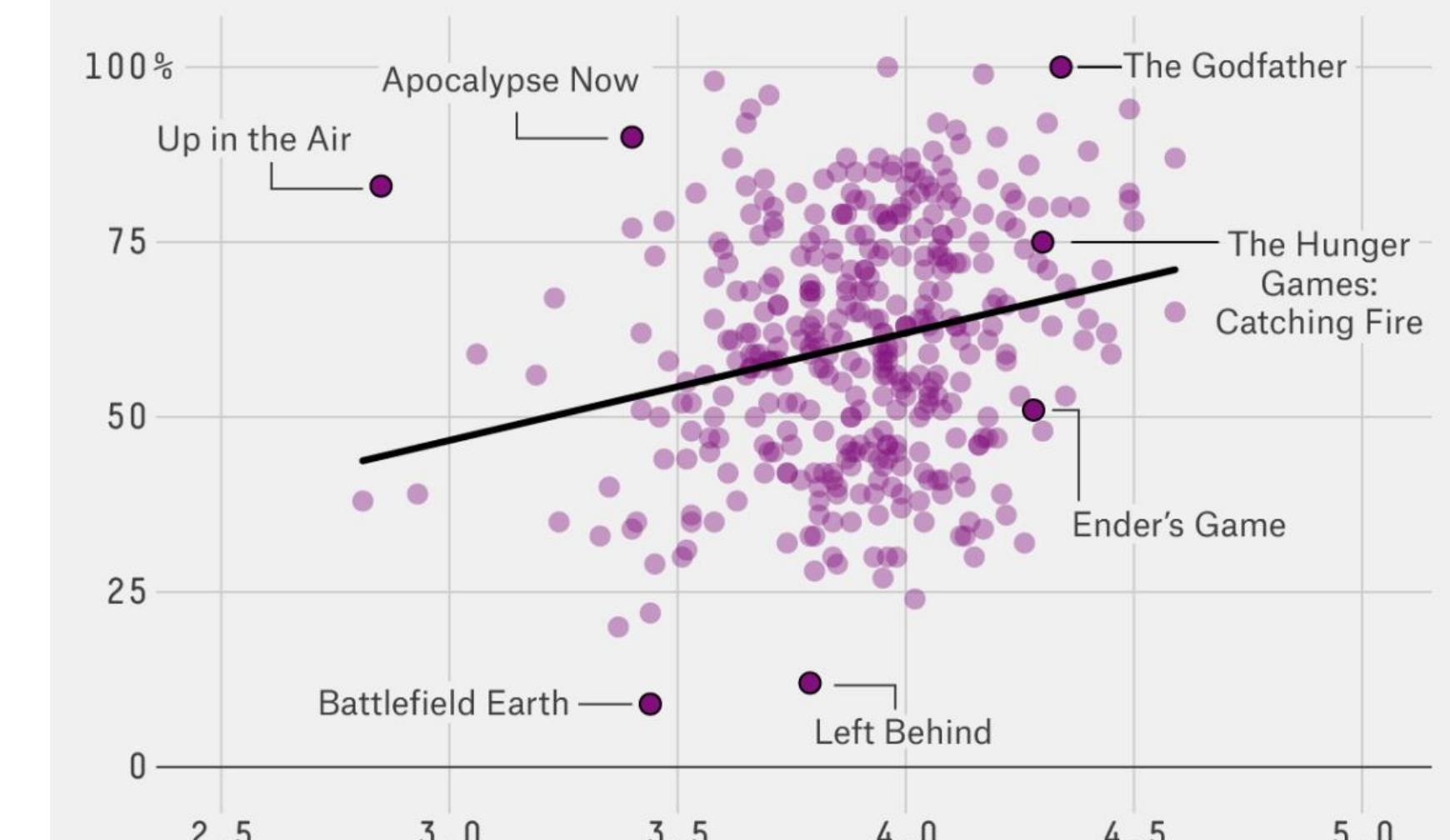
## ¿Cuándo hace falta contar una historia?

- La audiencia no tiene contexto previo sobre los datos/visualización: No puede “leer” la gráfica sin una guía
- Tendemos naturalmente a encontrar patrones, aunque no estén ahí. Una gráfica sin anotaciones, sin guía, puede llevar potencialmente a la audiencia a conclusiones erróneas.
- **Mostrar datos en una estructura narrativa es una forma de guiar al usuario**
- La audiencia puede tener o no un interés previo en el tema. Cuando no lo tiene, podemos crearlo utilizando técnicas de **storytelling**



## When Books Become Movies

Metacritic score of films vs. Goodreads score of source novel



# Tres tipos de estructura narrativa aplicables a data viz

No tiene que ser una historia necesariamente

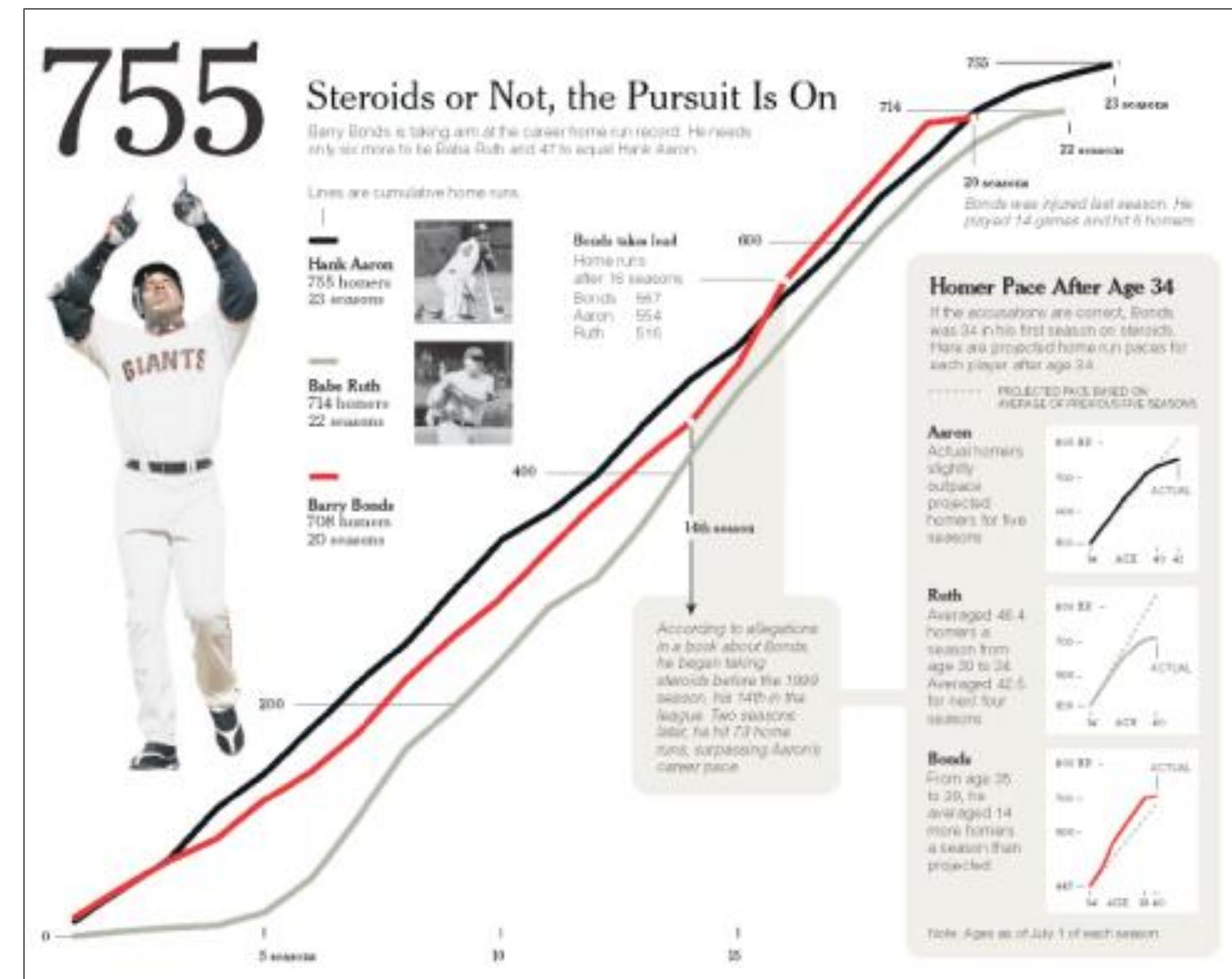
- Hay varias estrategias para ayudar al usuario a navegar por una visualización:
  - **Anotación.** Texto y marcas que ayuden a interpretarla
  - **Narración.** Anotaciones conectadas en una secuencia lógica
    - **Cerrada.** Estructura secuencial; mensaje definido
    - **Abierta.** Visualización exploratoria. Visualización como herramienta de búsqueda de narrativas
  - **Historia.** Una narración con personajes, factor humano, drama/conflicto para obtener una respuesta emocional



# Tres tipos de estructura narrativa aplicables a data viz

## No tiene que ser una historia necesariamente

- Hay varias estrategias para ayudar al usuario a navegar por una visualización:
  - **Anotación.** Texto y marcas que ayuden a interpretarla
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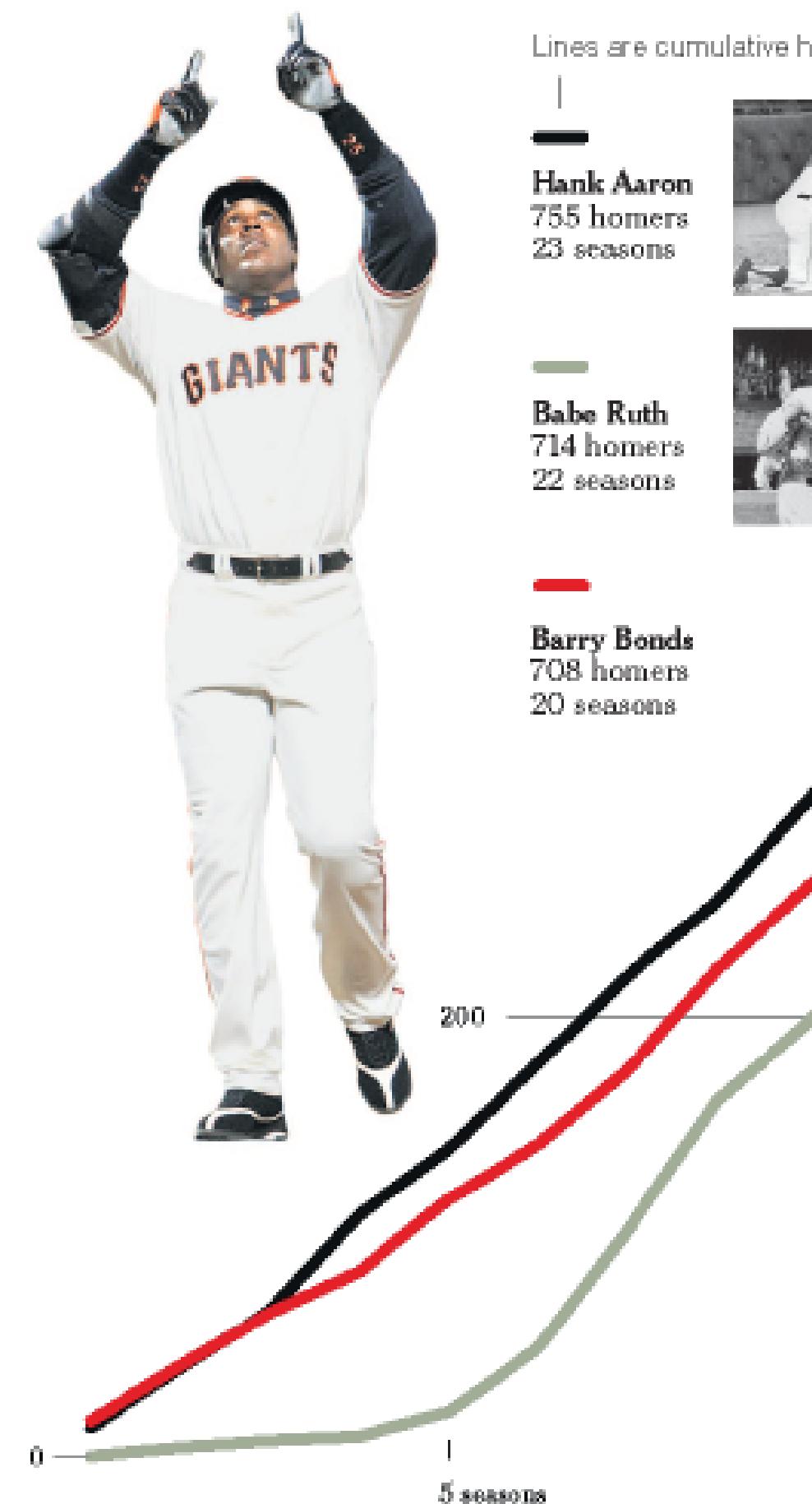


The New York Times

# Storytelling

Segel, E., & Heer, J. (2010). Narrative visualization: Telling stories with data. *IEEE transactions on visualization and computer graphics*, 16(6), 1139-1148.

# 755



## Steroids or Not, the Pursuit Is On

Barry Bonds is taking aim at the career home run record. He needs only six more to tie Babe Ruth and 47 to equal Hank Aaron.

Lines are cumulative home runs.

**Hank Aaron**  
755 home runs  
23 seasons



**Babe Ruth**  
714 home runs  
22 seasons



**Barry Bonds**  
708 home runs  
20 seasons



**Bonds takes lead**  
Home runs after 16 seasons  
Bonds 567  
Aaron 554  
Ruth 516

600

400

14th season

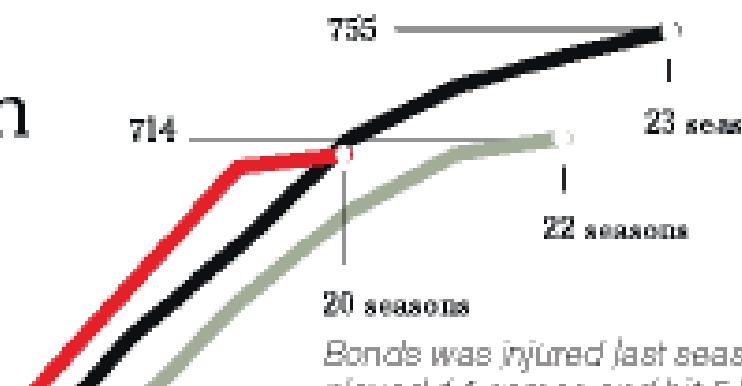
200

0

5 seasons

10

15

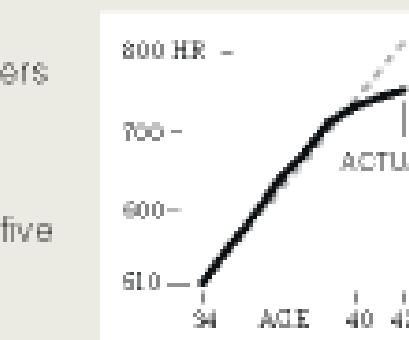


### Homer Pace After Age 34

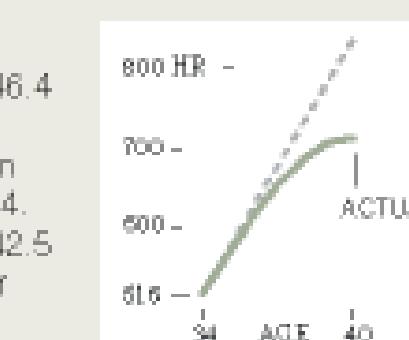
If the accusations are correct, Bonds was 34 in his first season on steroids. Here are projected home run paces for each player after age 34.

— PROJECTED PACE BASED ON AVERAGE OF PREVIOUS FIVE SEASONS

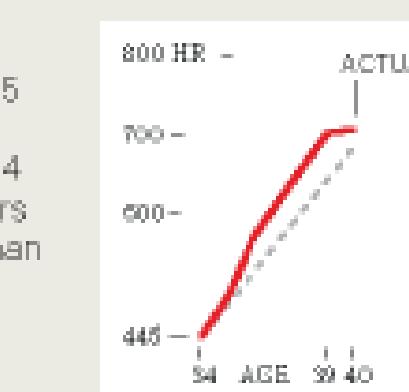
**Aaron**  
Actual homers slightly outpace projected homers for five seasons.



**Ruth**  
Averaged 46.4 homers a season from age 30 to 34. Averaged 42.5 for next four seasons.

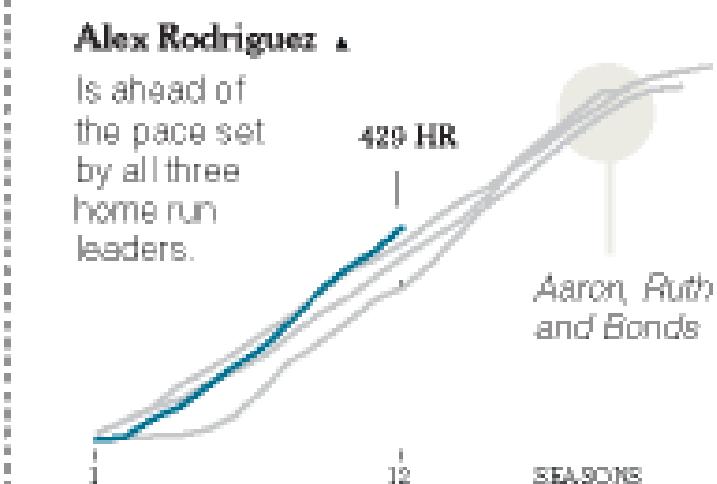
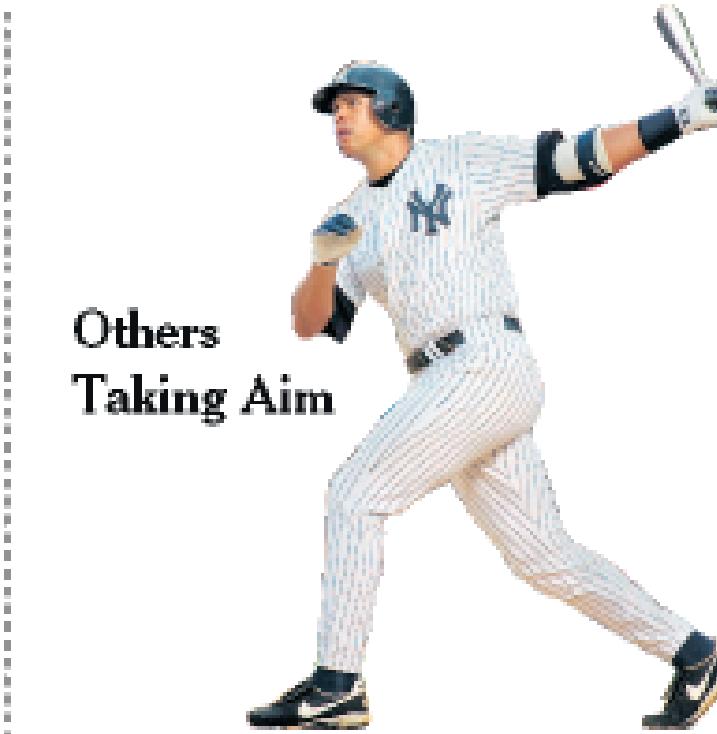


**Bonds**  
From age 35 to 39, he averaged 14 more homers a season than projected.

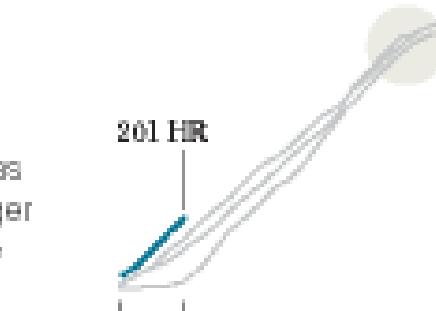


Note: Ages as of July 1 of each season.

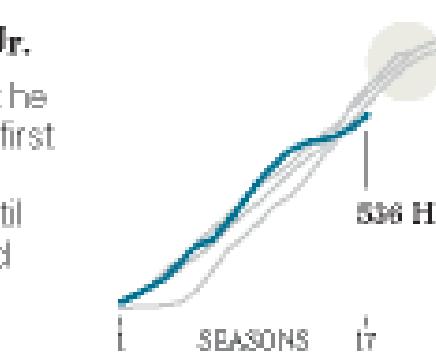
### Others Taking Aim



**Albert Pujols**  
Averaging 40 homers a season, he has started stronger than the three leaders did.



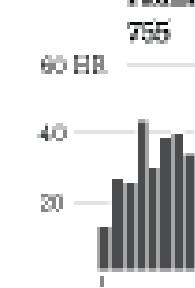
**Ken Griffey Jr.**  
Many thought he would be the first to catch Ruth and Aaron until injuries limited his output.



### Differing Paths to the Top of the Charts

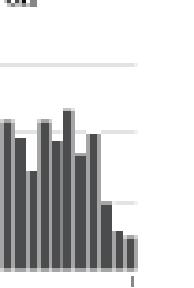
The top seven players on the career home run list, along with a look at Griffey (12th), Rodriguez (37th) and Pujols (tied 257th).

**Hank Aaron**



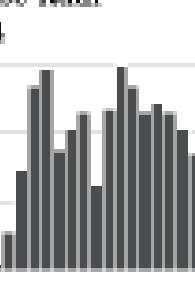
15 times hit 30 or more (M.L. most).

**Babe Ruth**



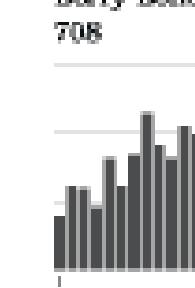
Hit only 20 over first five seasons.

**Barry Bonds**



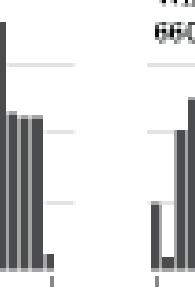
Averaged 52 from 2000 to 2004.

**Willie Mays**



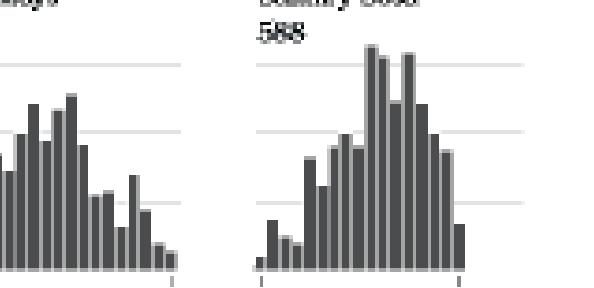
No one hit more than 60-homer seasons is record.

**Sammy Sosa**



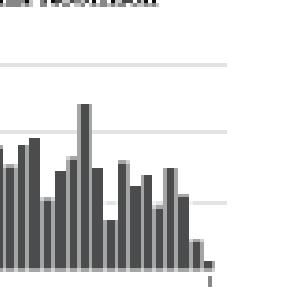
Three 60-homer seasons is record.

**Frank Robinson**



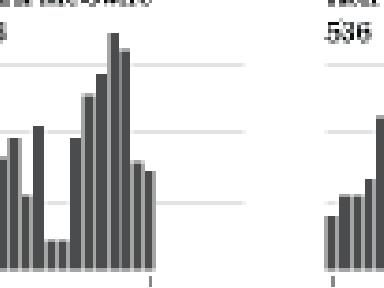
Triple Crown in '66 (49, 122, 316).

**Mark McGwire**



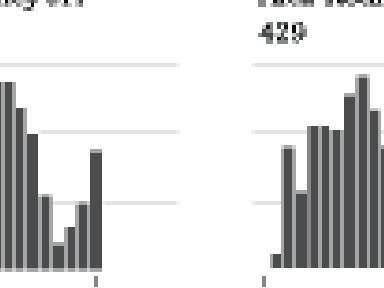
First to hit 70 in a season.

**Ken Griffey Jr.**



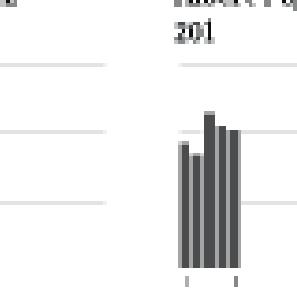
Only McGwire had more in the 90's.

**Alex Rodriguez**



Youngest to reach 400 homers.

**Albert Pujols**



Second most ever in first five seasons.

Anita Ong and Joe Ward/The New York Times

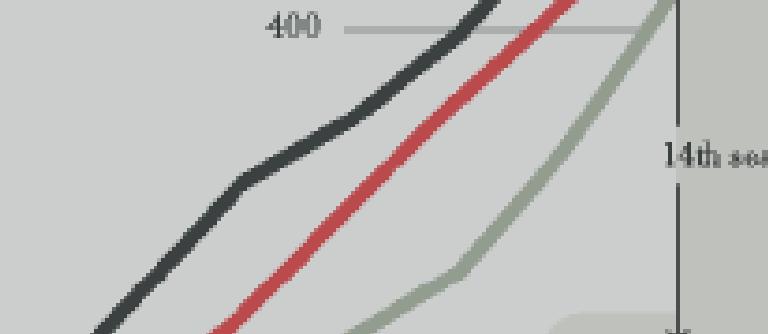
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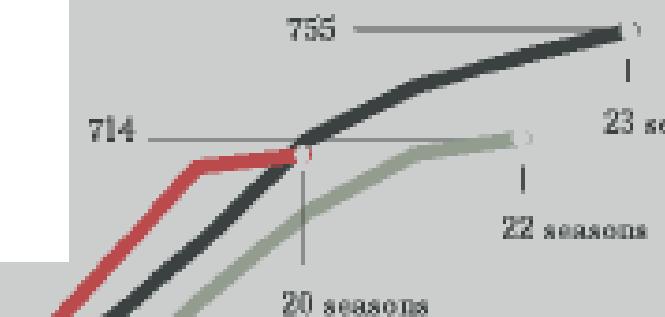
## Steroids or Not, the Pursuit Is On

Barry Bonds is taking aim at the career home run record. He needs only six more to tie Babe Ruth and 47 to equal Hank Aaron.

Lines are cumulative home runs.



According to allegations in a book about Bonds, he began taking steroids before the 1999 season, his 14th in the league. Two seasons later, he hit 73 home runs, surpassing Aaron's career pace.



Bonds was injured last season. He played 14 games and hit 5 home runs.

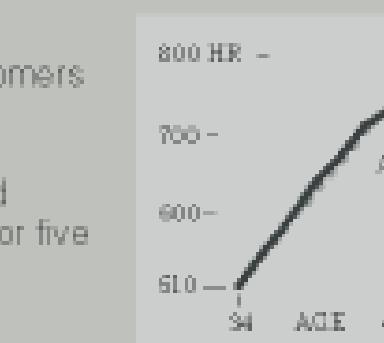
### Homer Pace After Age 34

If the accusations are correct, Bonds was 34 in his first season on steroids. Here are projected home run paces for each player after age 34.

— PROJECTION BASED ON AVERAGE OF PREVIOUS FIVE SEASONS

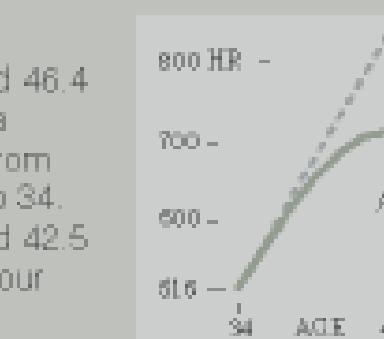
#### Aaron

Actual homers slightly outpace projected homers for five seasons.



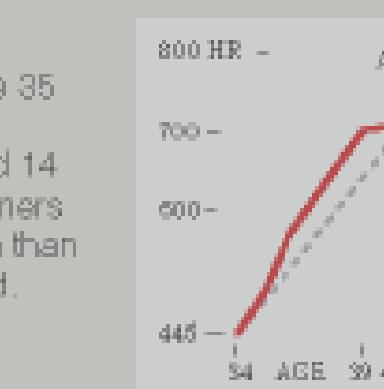
#### Ruth

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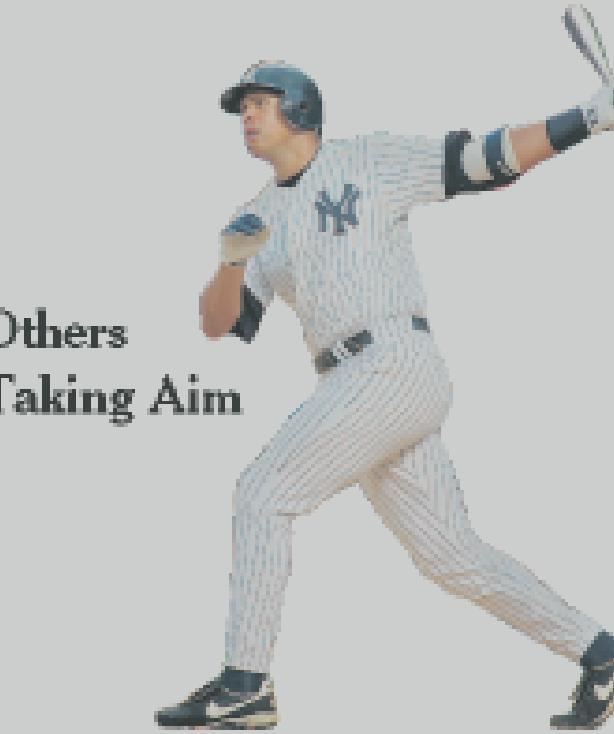
#### Bonds

From age 35 to 39, he averaged 14 more homers a season than projected.



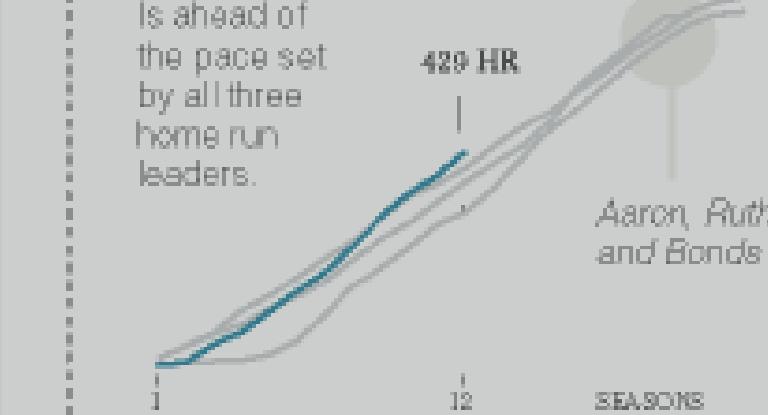
Note: Ages as of July 1 of each season.

### Others Taking Aim



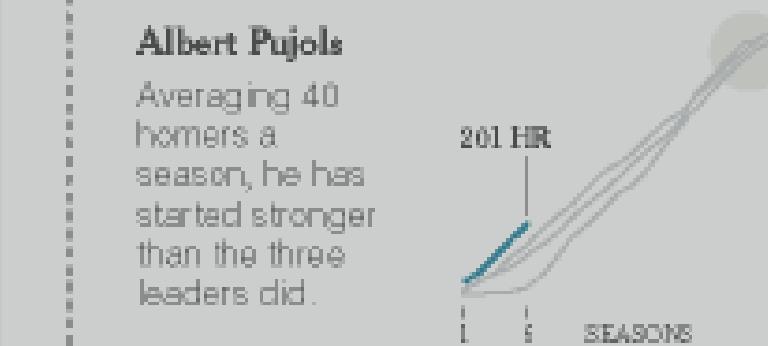
#### Alex Rodriguez

Is ahead of the pace set by all three home run leaders.



#### Albert Pujols

Averaging 40 homers a season, he has started stronger than the three leaders did.



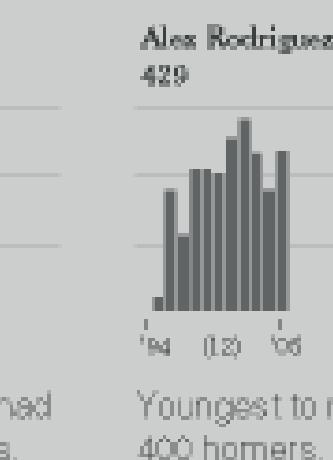
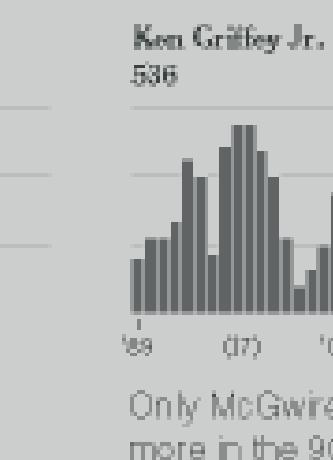
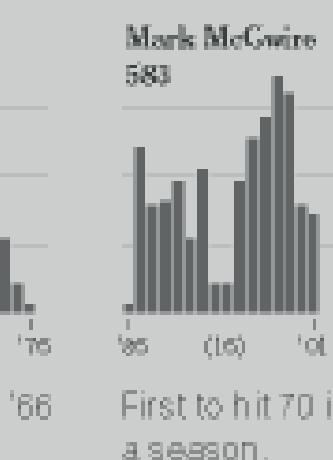
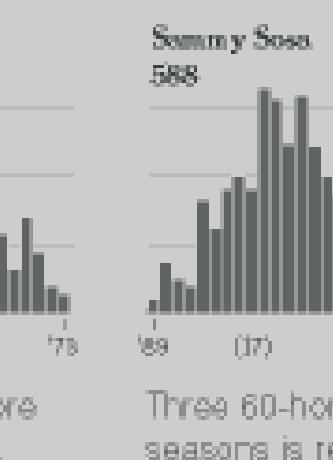
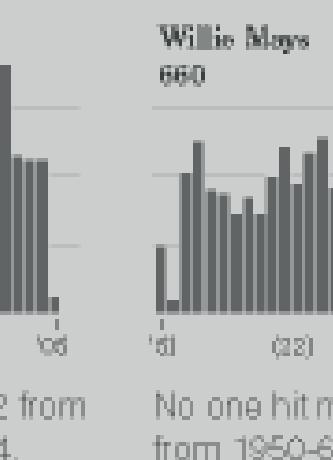
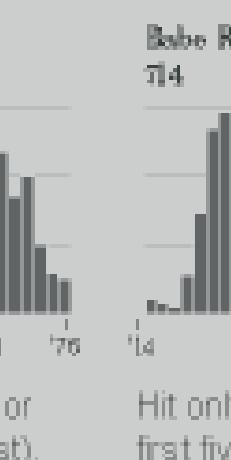
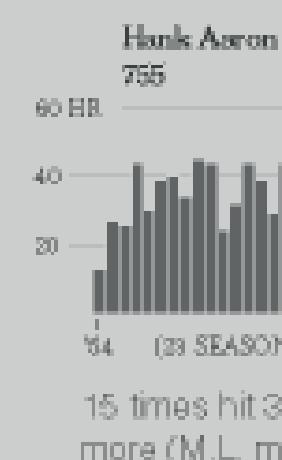
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# 755

## Steroids or Not, the Pursuit Is On

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Lines are cumulative home runs.

  
Hank Aaron  
755 homers  
23 seasons

  
Babe Ruth  
714 homers  
22 seasons

  
Barry Bonds  
708 homers  
20 seasons

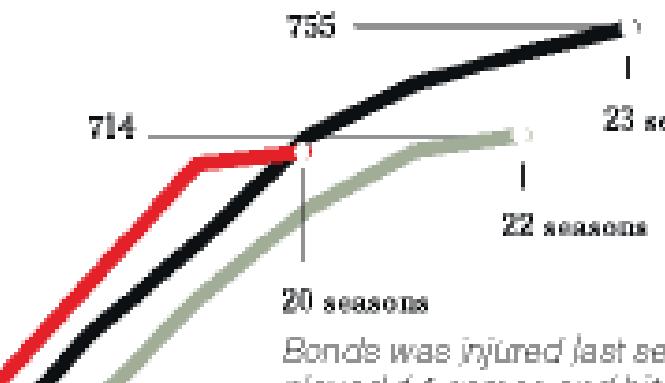
Bonds takes lead

Home runs  
after 16 seasons  
Bonds 567  
Aaron 554  
Ruth 516

600

14th season

According to allegations in a book about Bonds, he began taking steroids before the 1999 season, his 14th in the league. Two seasons later, he hit 73 home runs, surpassing Aaron's career pace.



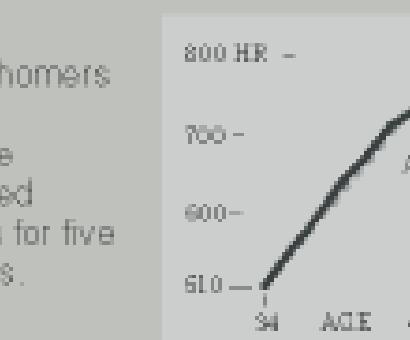
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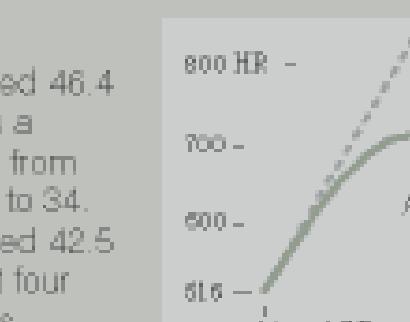
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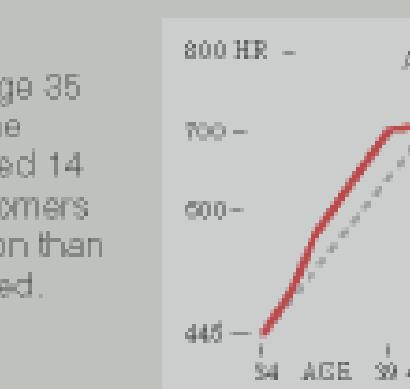
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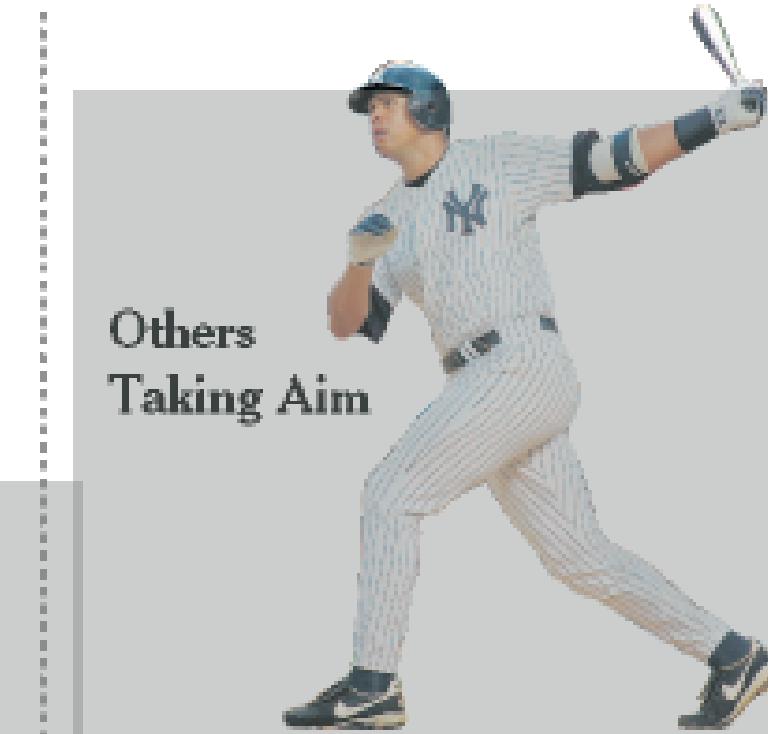
Bonds

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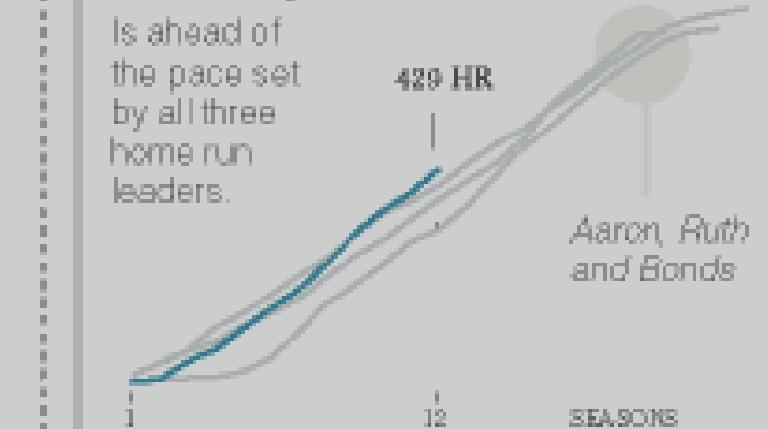
Note: Ages as of July 1 of each season.

### Others Taking Aim



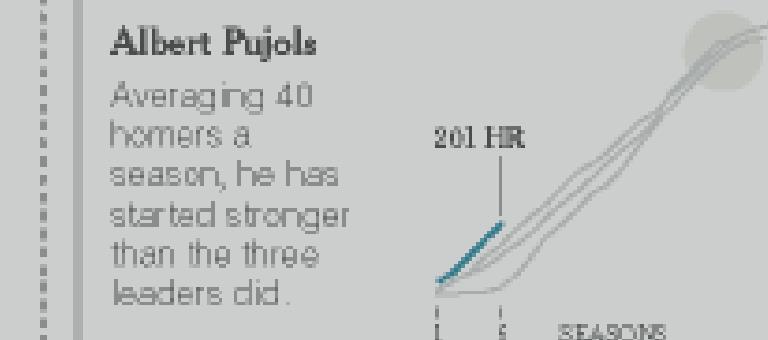
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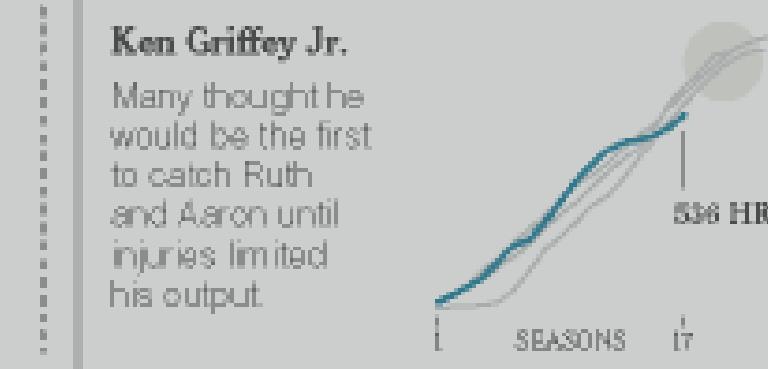
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#### Ken Griffey Jr.

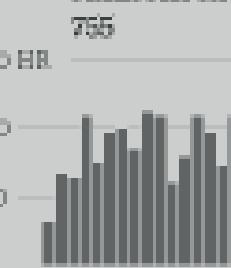
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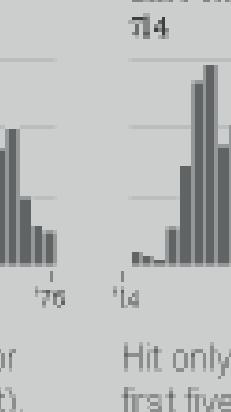
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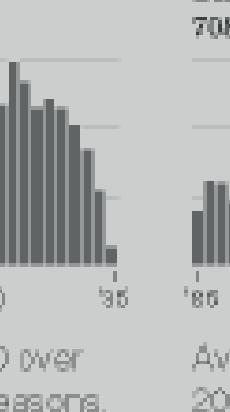
Hank Aaron



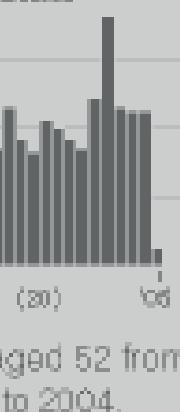
Babe Ruth



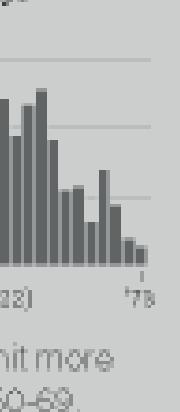
Barry Bonds



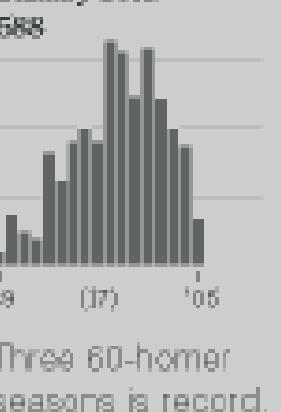
Willie Mays



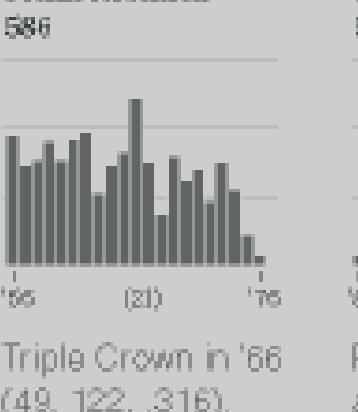
Sammy Sosa



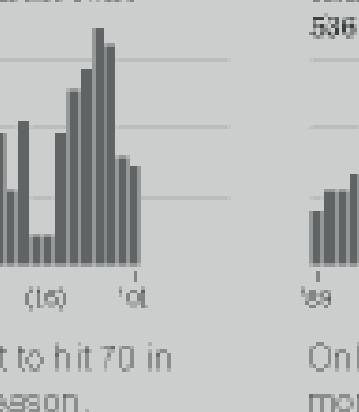
Frank Robinson



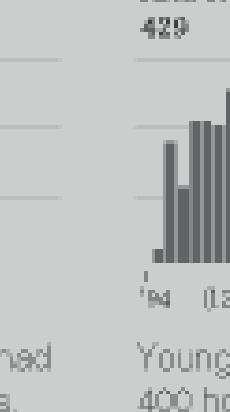
Mark McGwire



Ken Griffey Jr.



Alex Rodriguez



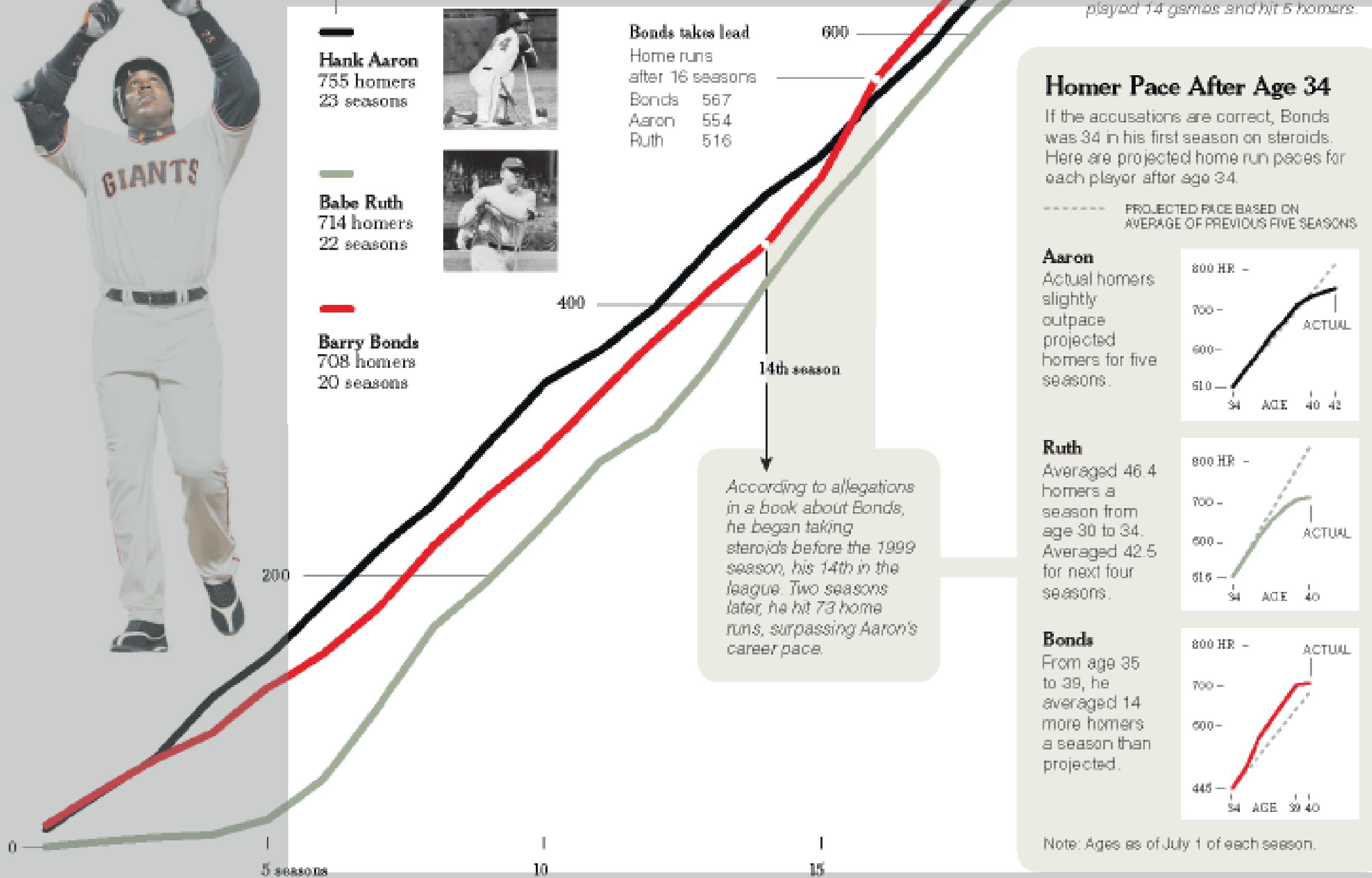
# 755



## Steroids or Not, the Pursuit Is On

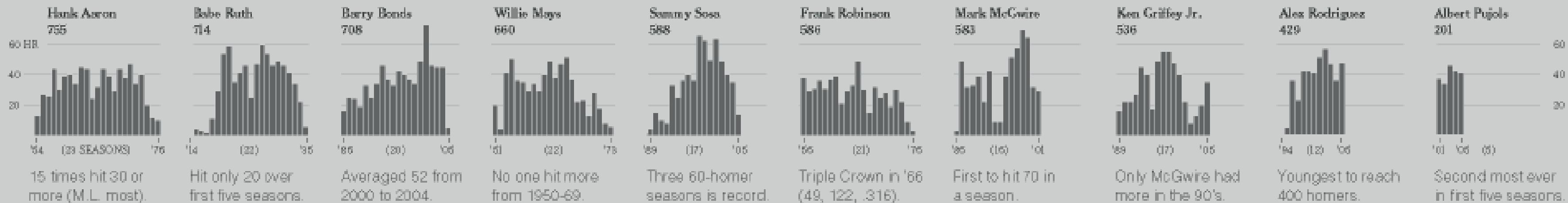
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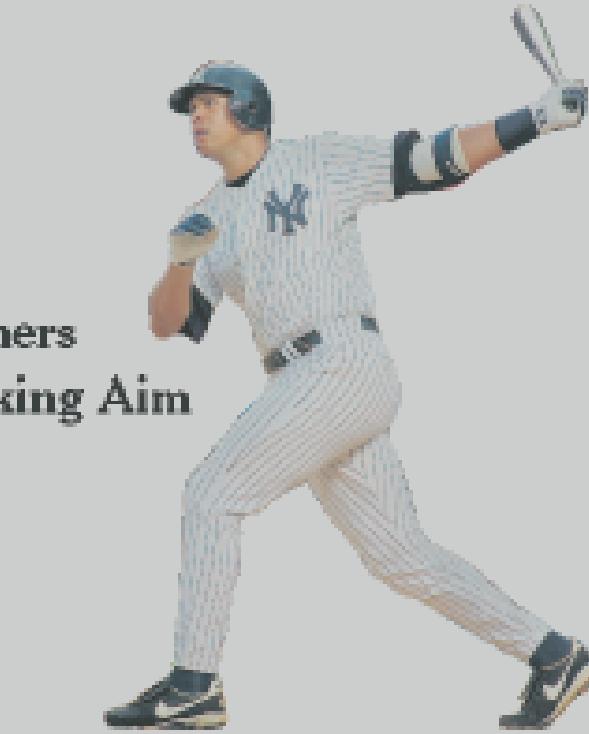


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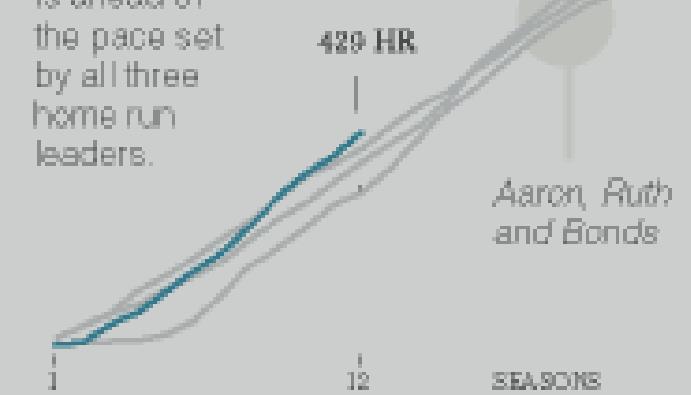


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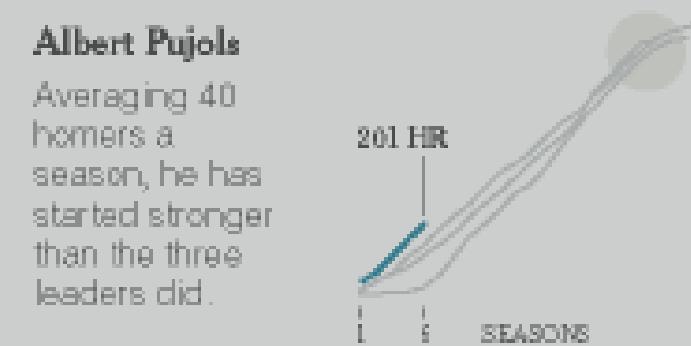
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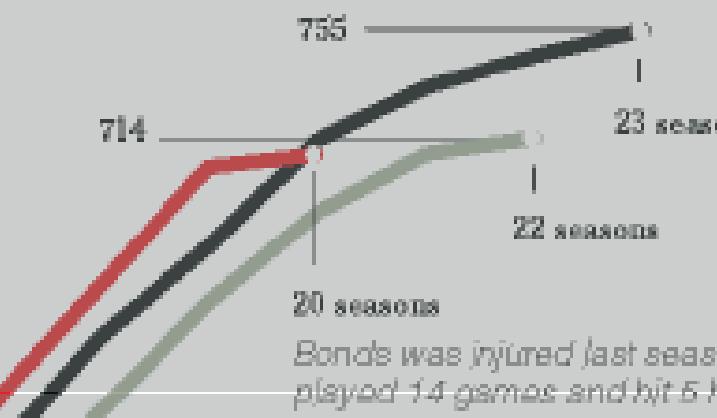
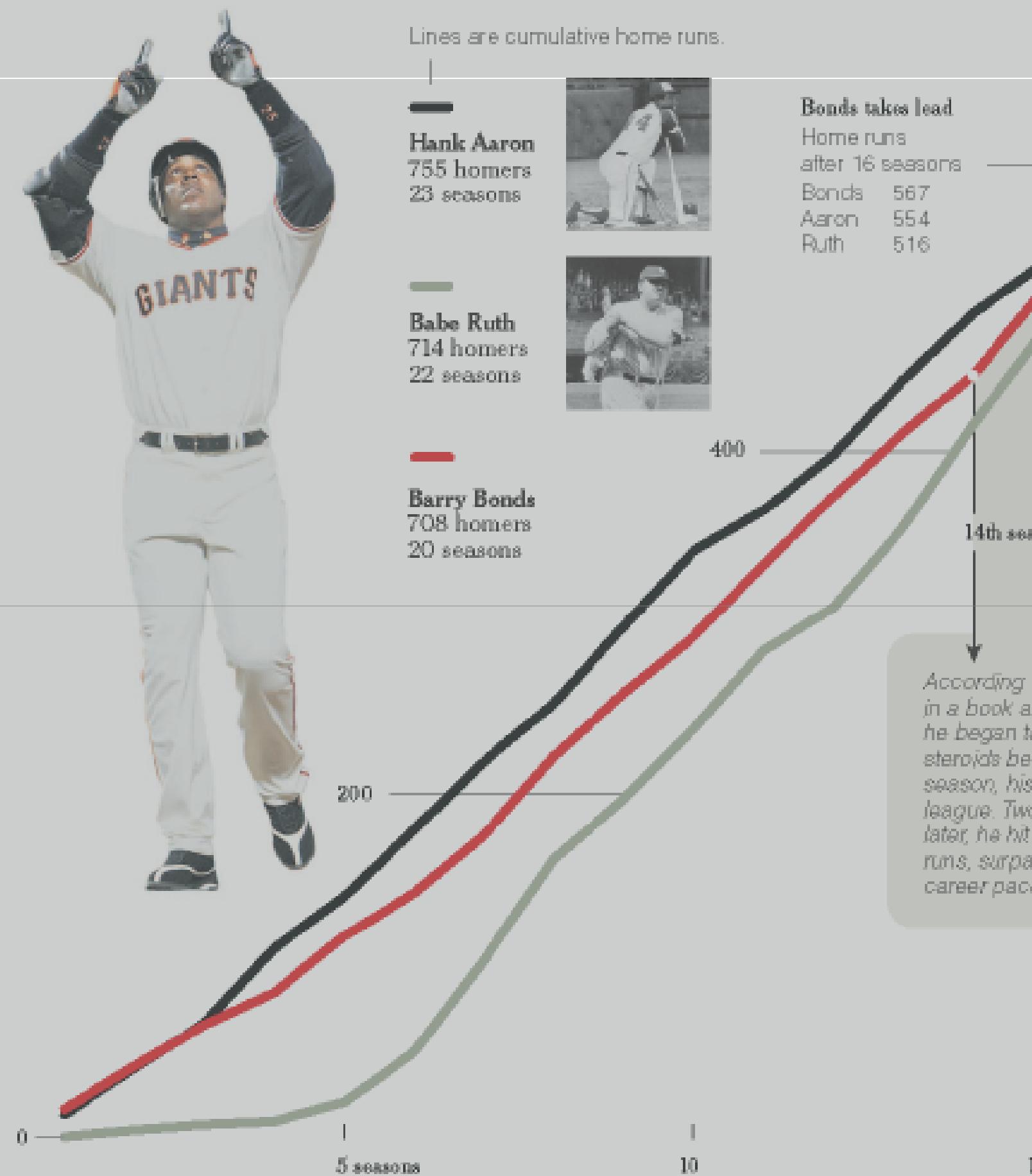


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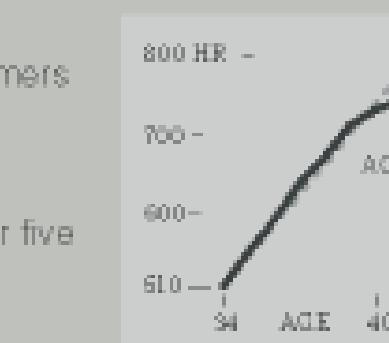
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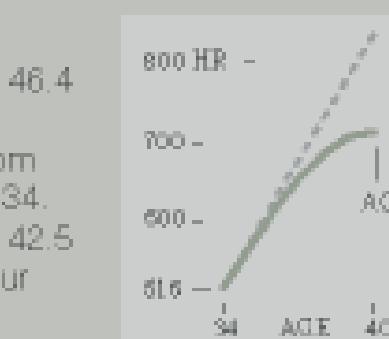
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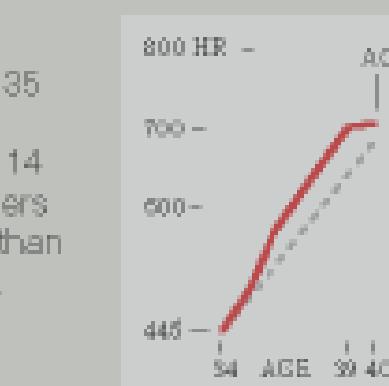
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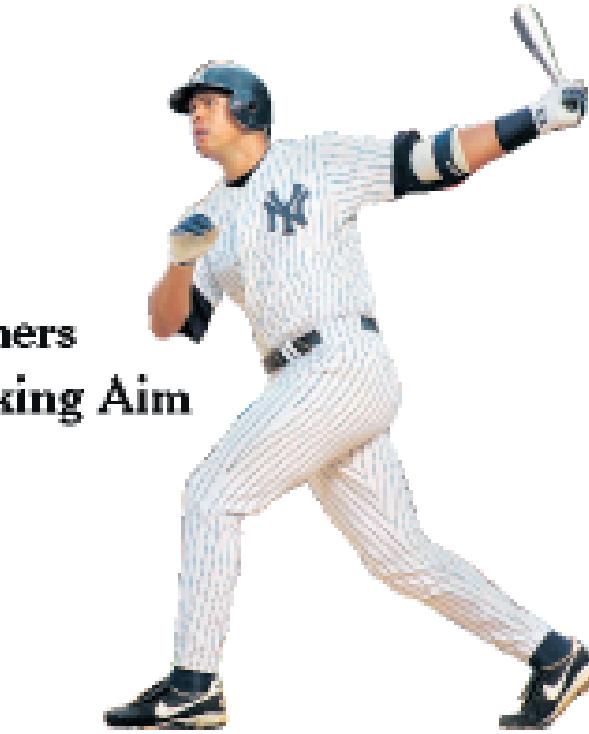
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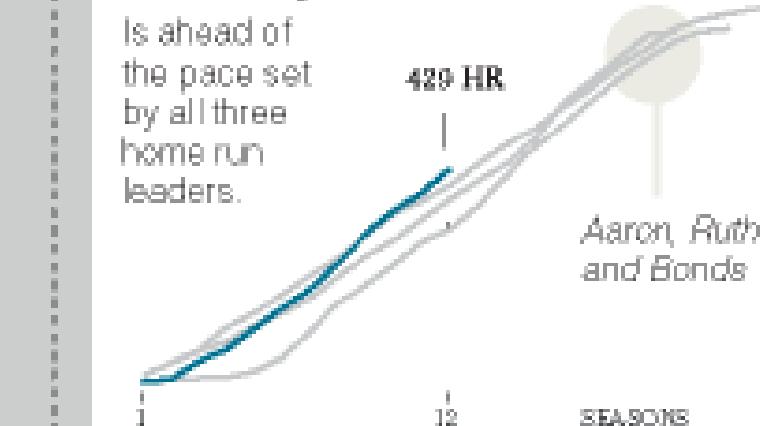
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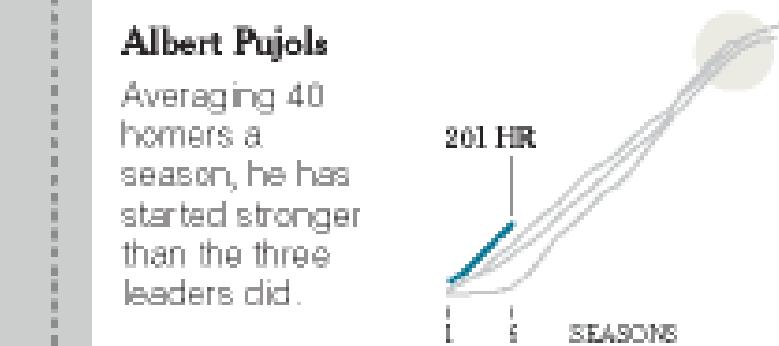
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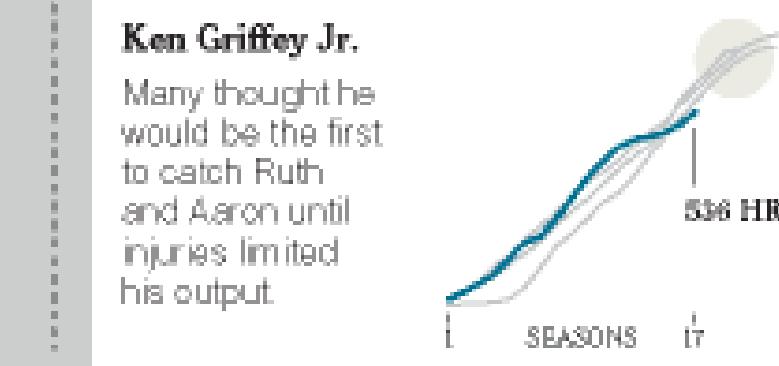
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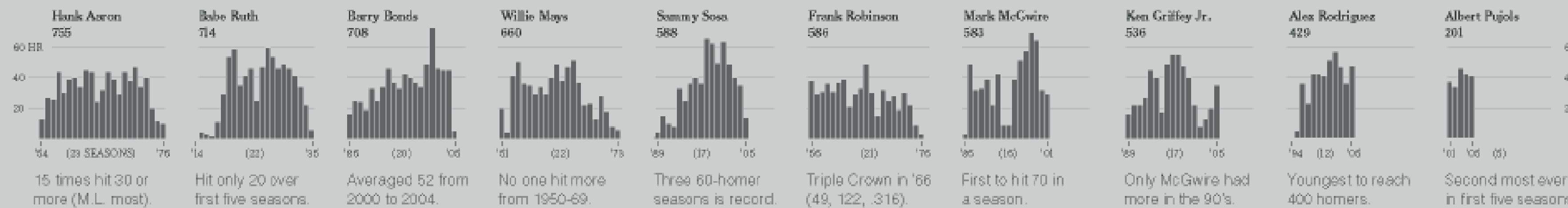
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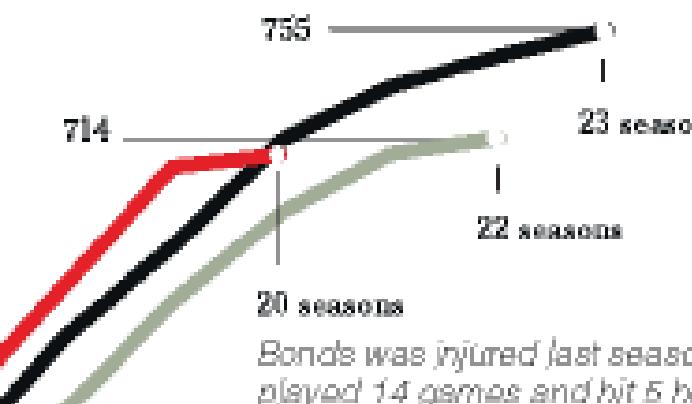
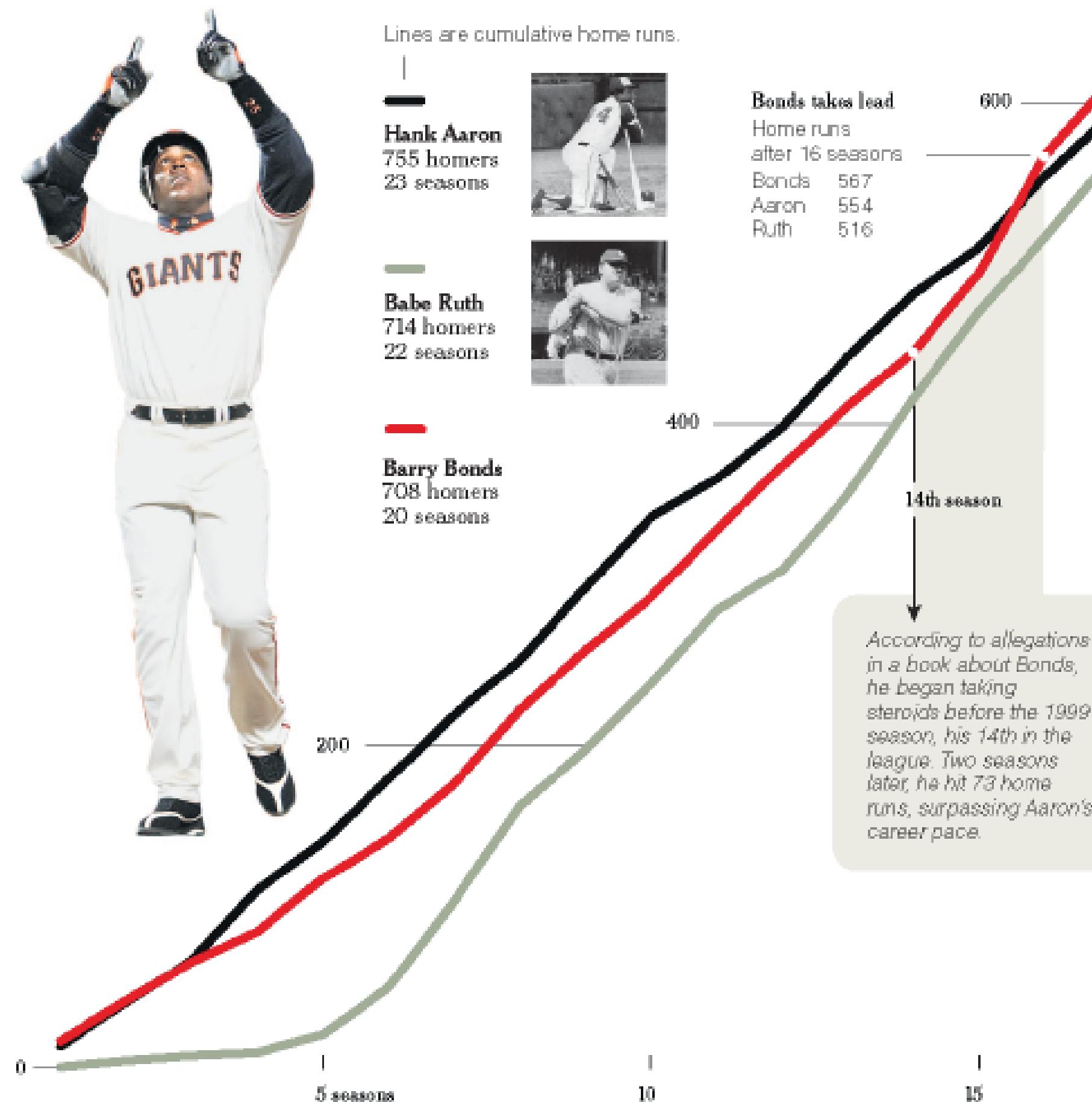


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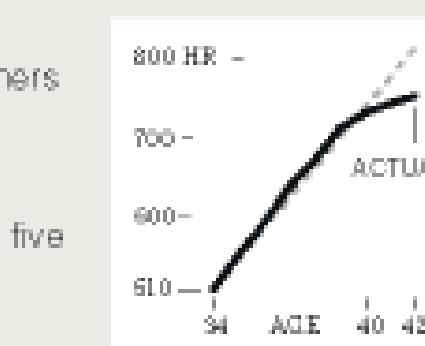
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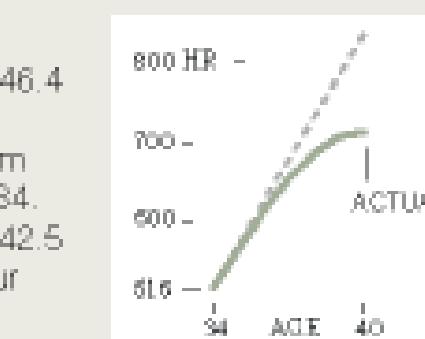
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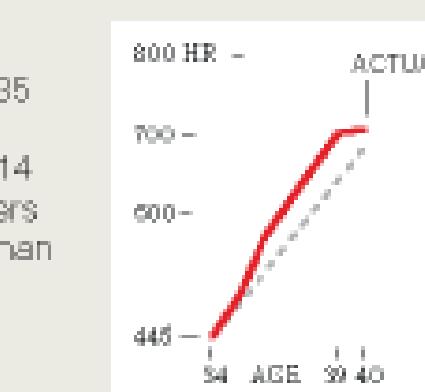
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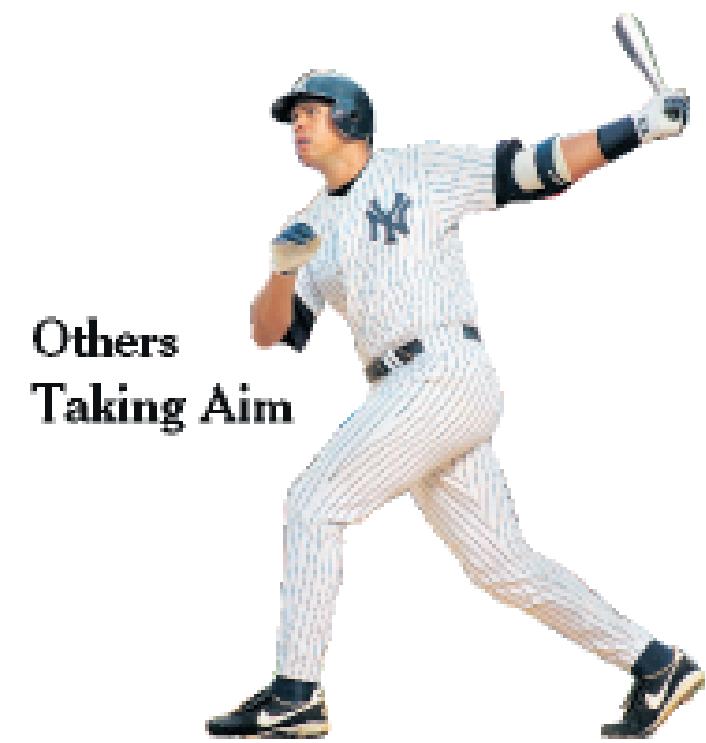
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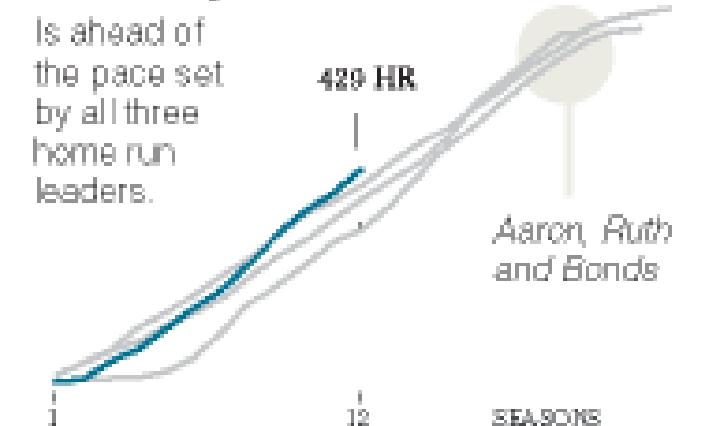
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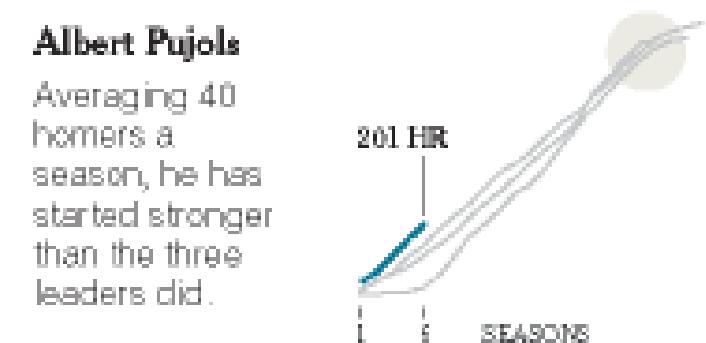
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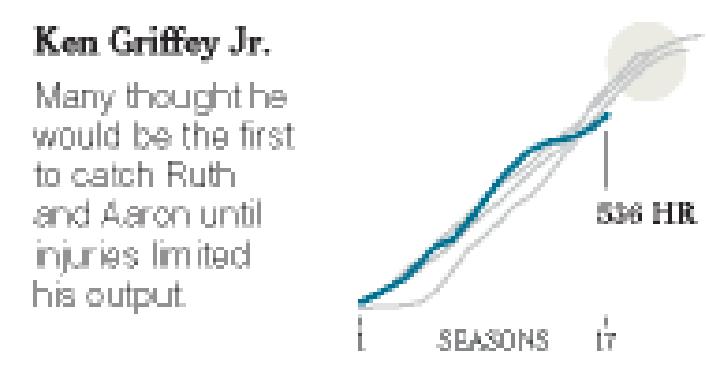
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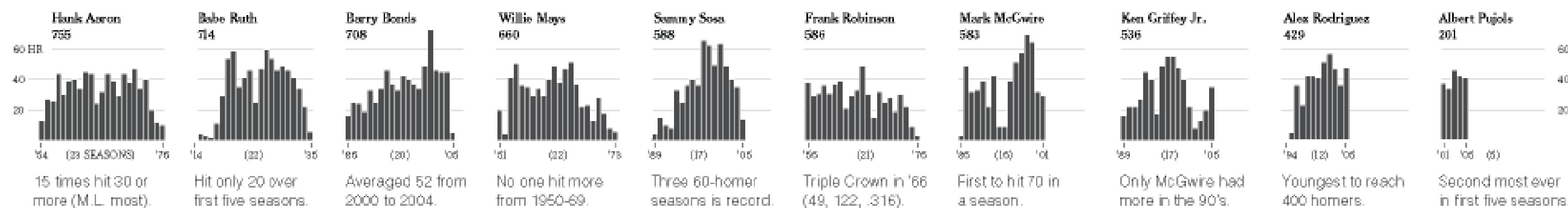
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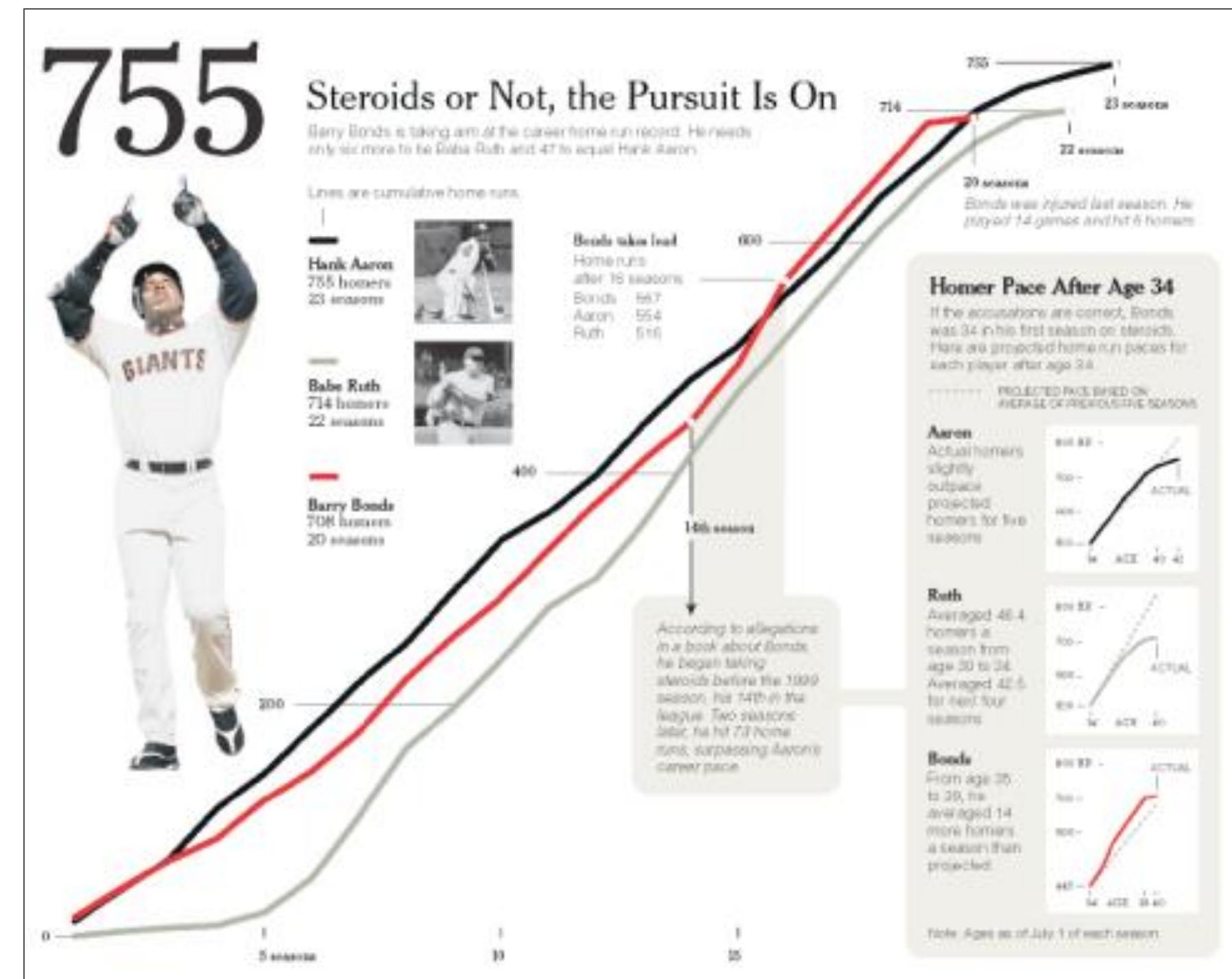


Annette Cox and Joe Ward/The New York Times

# Tres tipos de estructura narrativa aplicables a data viz

## No tiene que ser una historia necesariamente

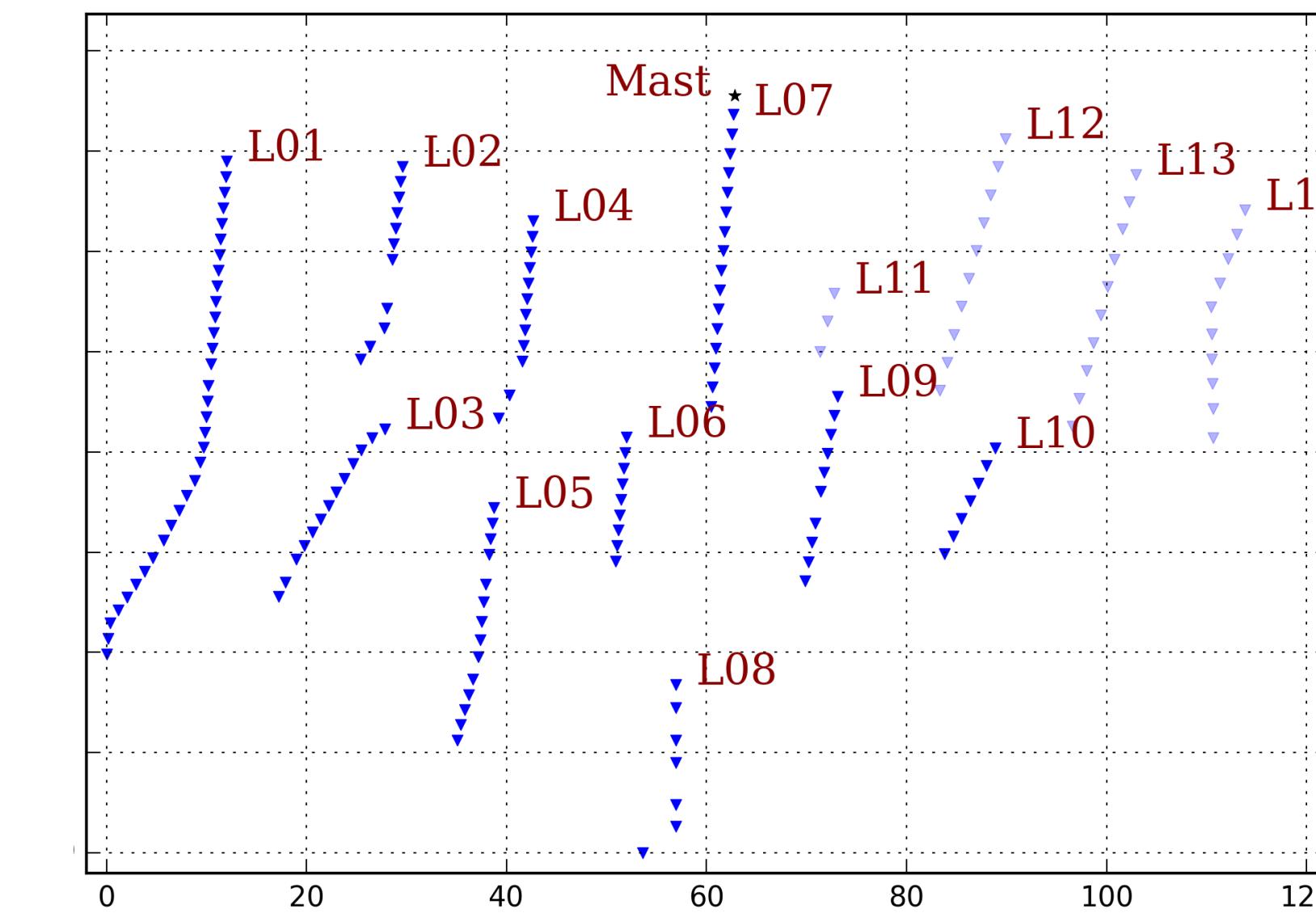
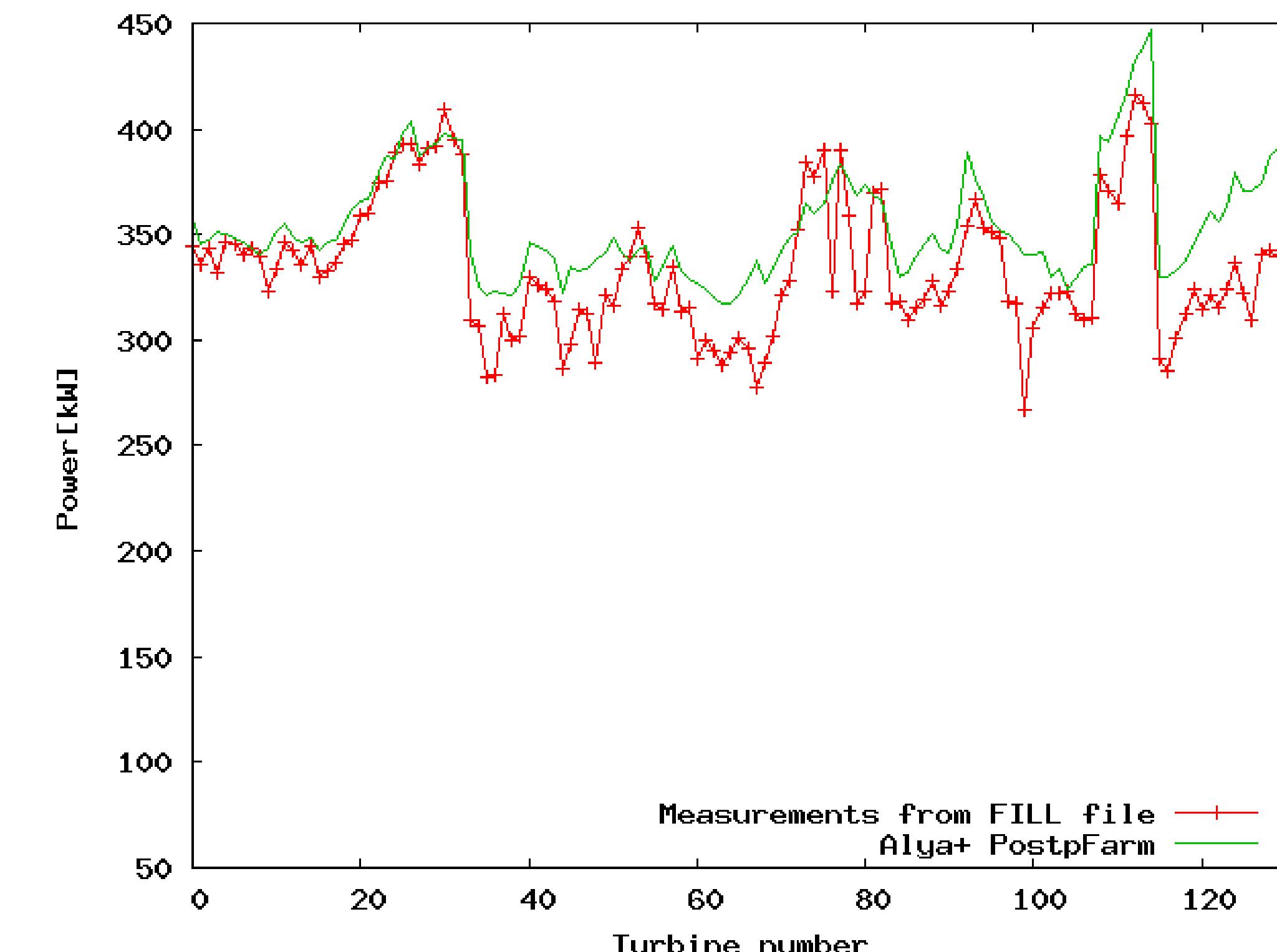
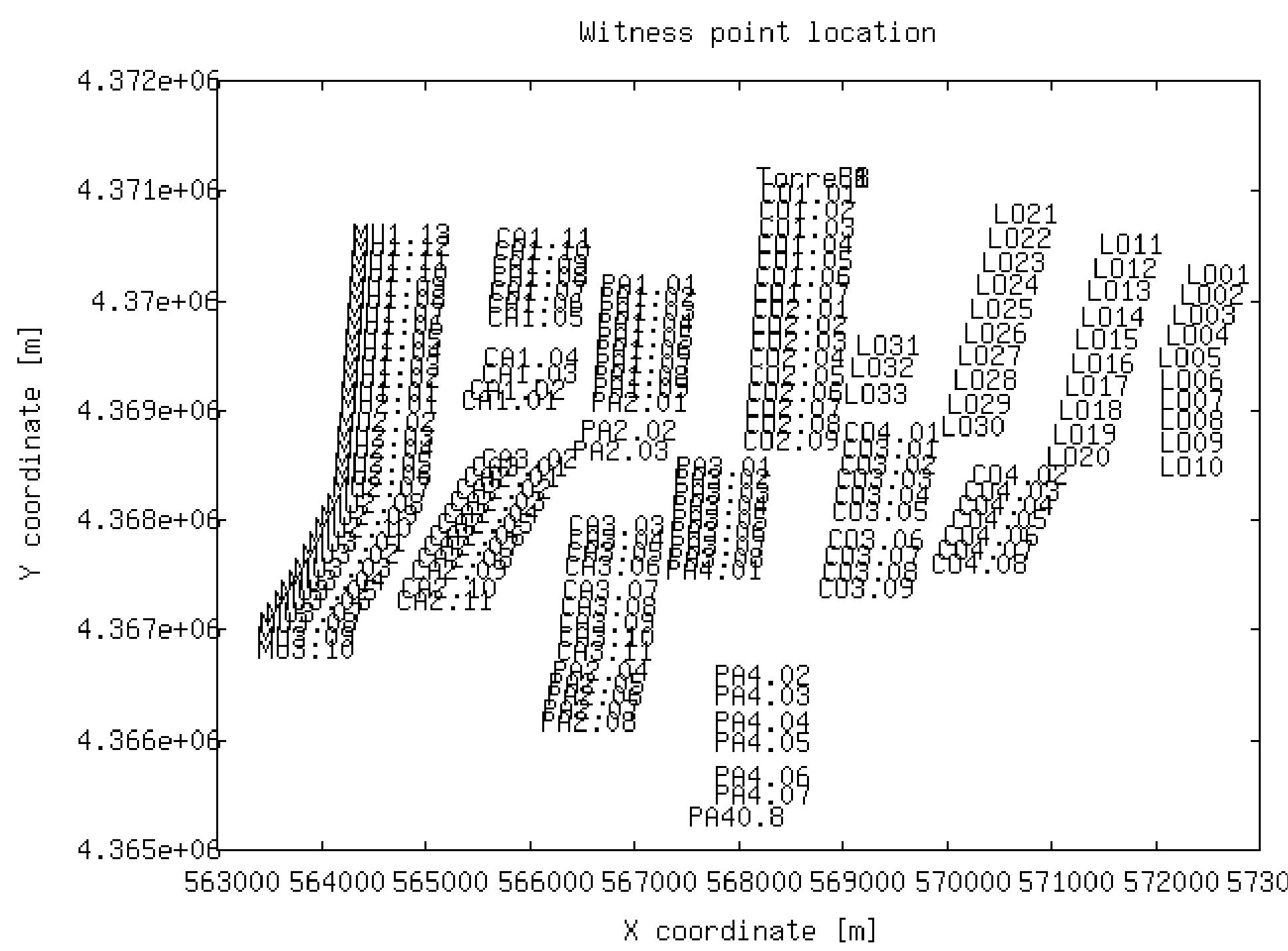
- Hay varias estrategias para ayudar al usuario a navegar por una visualización:
  - **Anotación.** Texto y marcas que ayuden a interpretarla
  - **Narración.** Anotaciones conectadas en una secuencia lógica
    - **Cerrada.** Estructura secuencial; mensaje definido
    - **Abierta.** Visualización exploratoria. Visualización como herramienta de búsqueda de narrativas
  - **Historia.** Una narración con personajes, factor humano, drama/conflicto para obtener una respuesta emocional



The New York Times

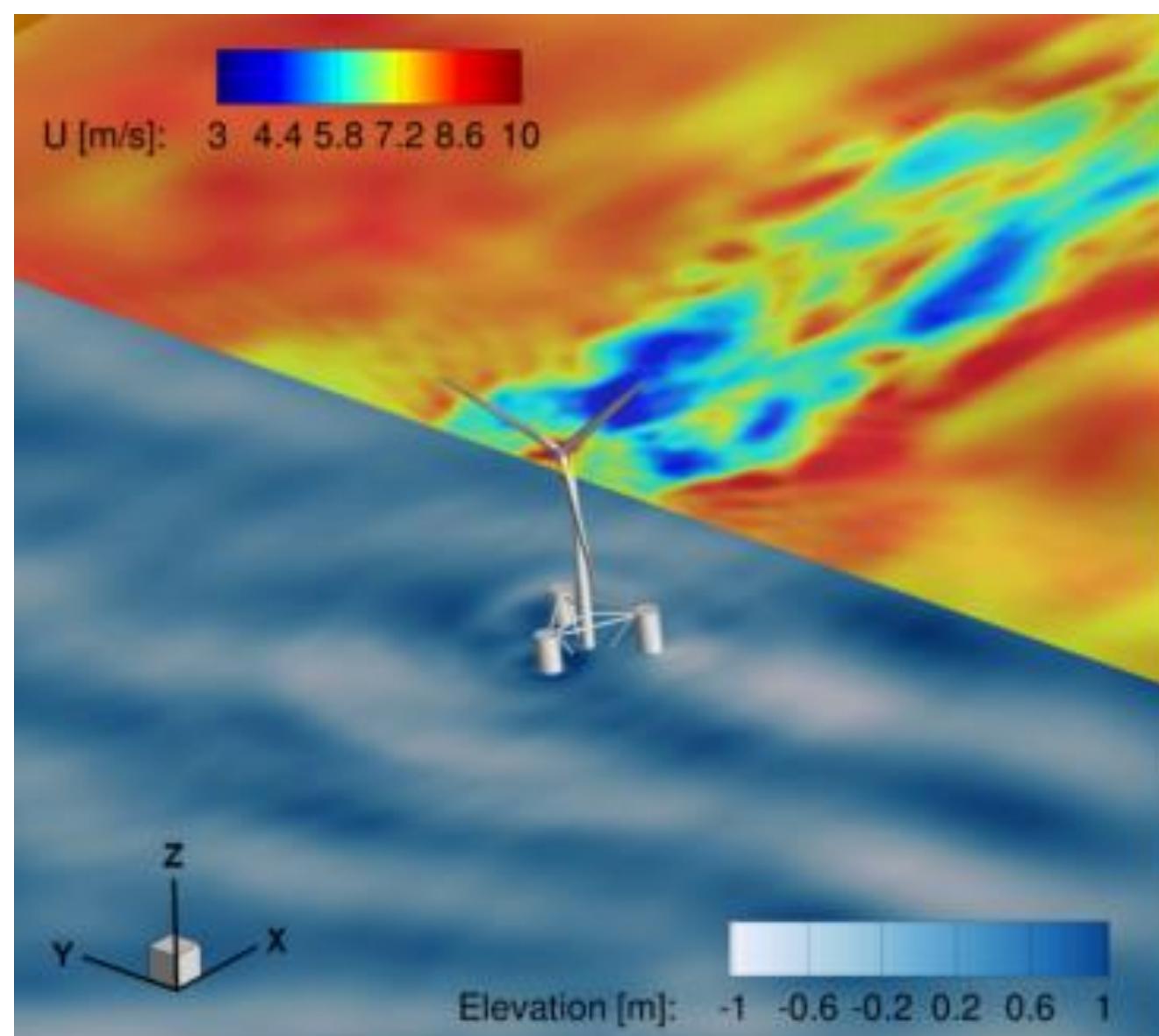
## Plots originales

- Simulación del viento para calcular producción de energía en una planta eólica
- Comparación de mediciones reales (rojo) Vs. los resultados de las simulaciones (verde)
- Promedio anual de cada molino ( $N=132$ )
- Dataset tiene Potencia (kW), ID, array ID, y localización

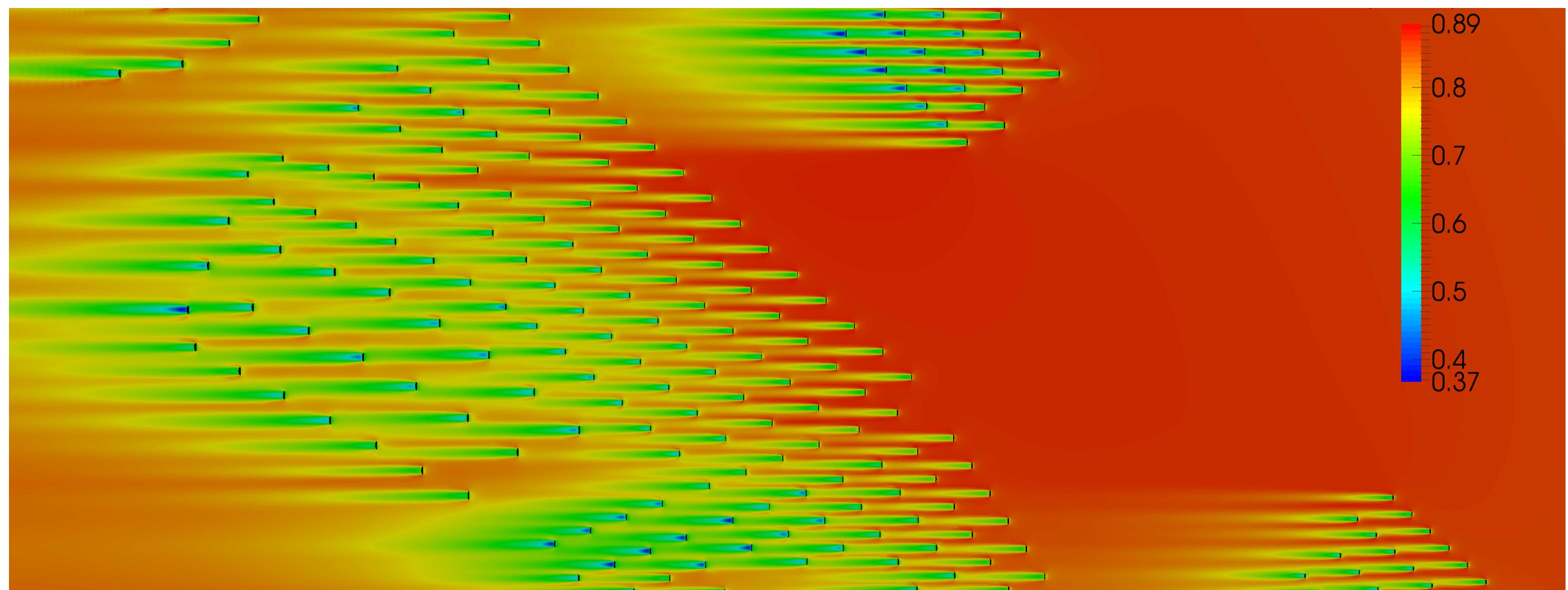


## Datos adicionales

- Simulación 3D de la velocidad del viento sobre terreno complejo
- Normalmente graficado como cortes 2D sobre el centro de las aspas

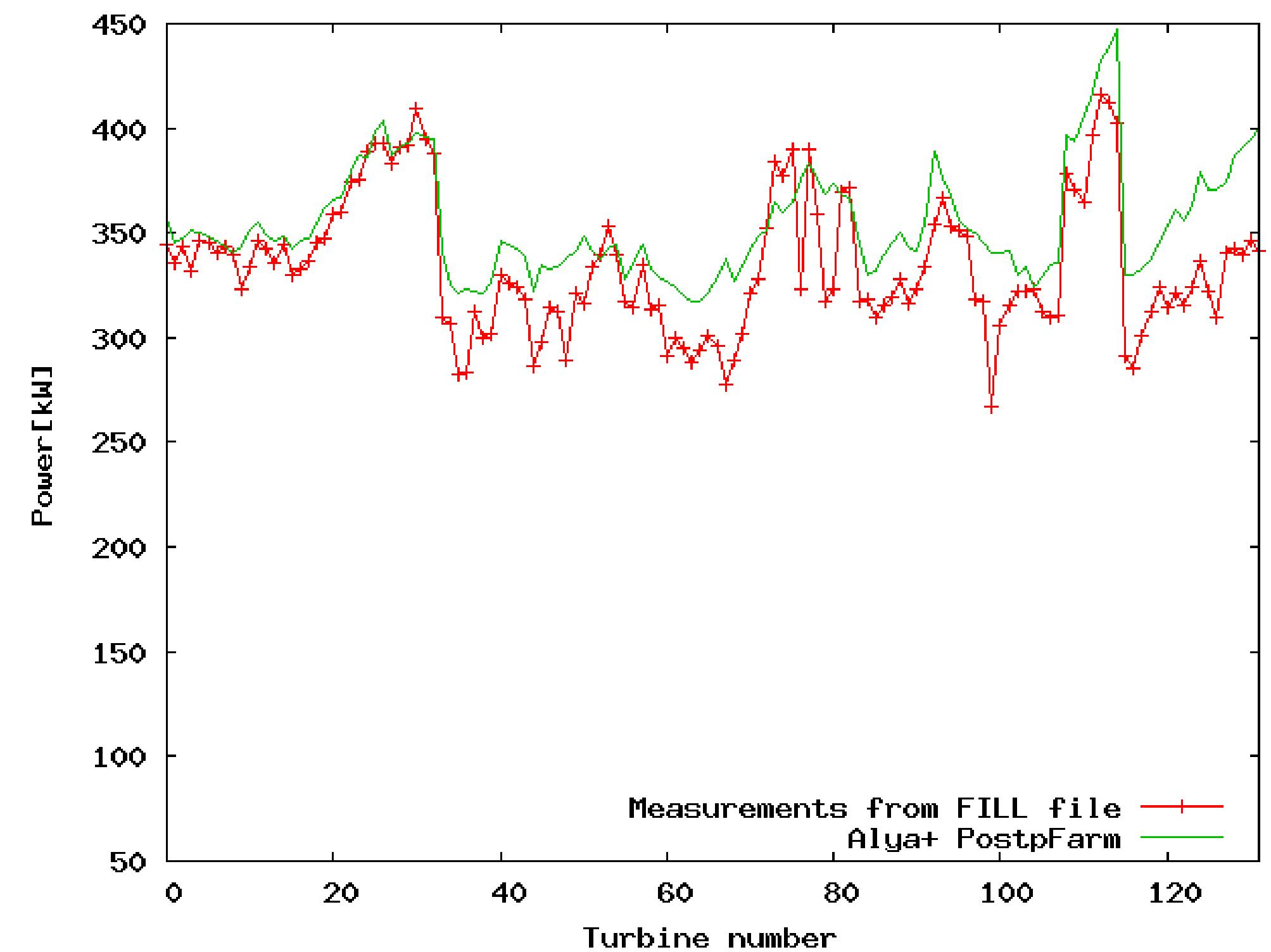


<https://www.energy.gov/eere>



Barcelona Supercomputing Center

**Original plot**



**Checklist básica**

- Quién es la audiencia?** Project partners en empresa de energía
- Cómo se usará?** Presentación de resultados/Divulgación
- Cual es el objetivo?** Comparar resultados vs. mediciones      Evaluar la exactitud del modelo
- Cual es el desafío?** Resaltar las diferencias entre valores y aclarar qué se representa en cada eje

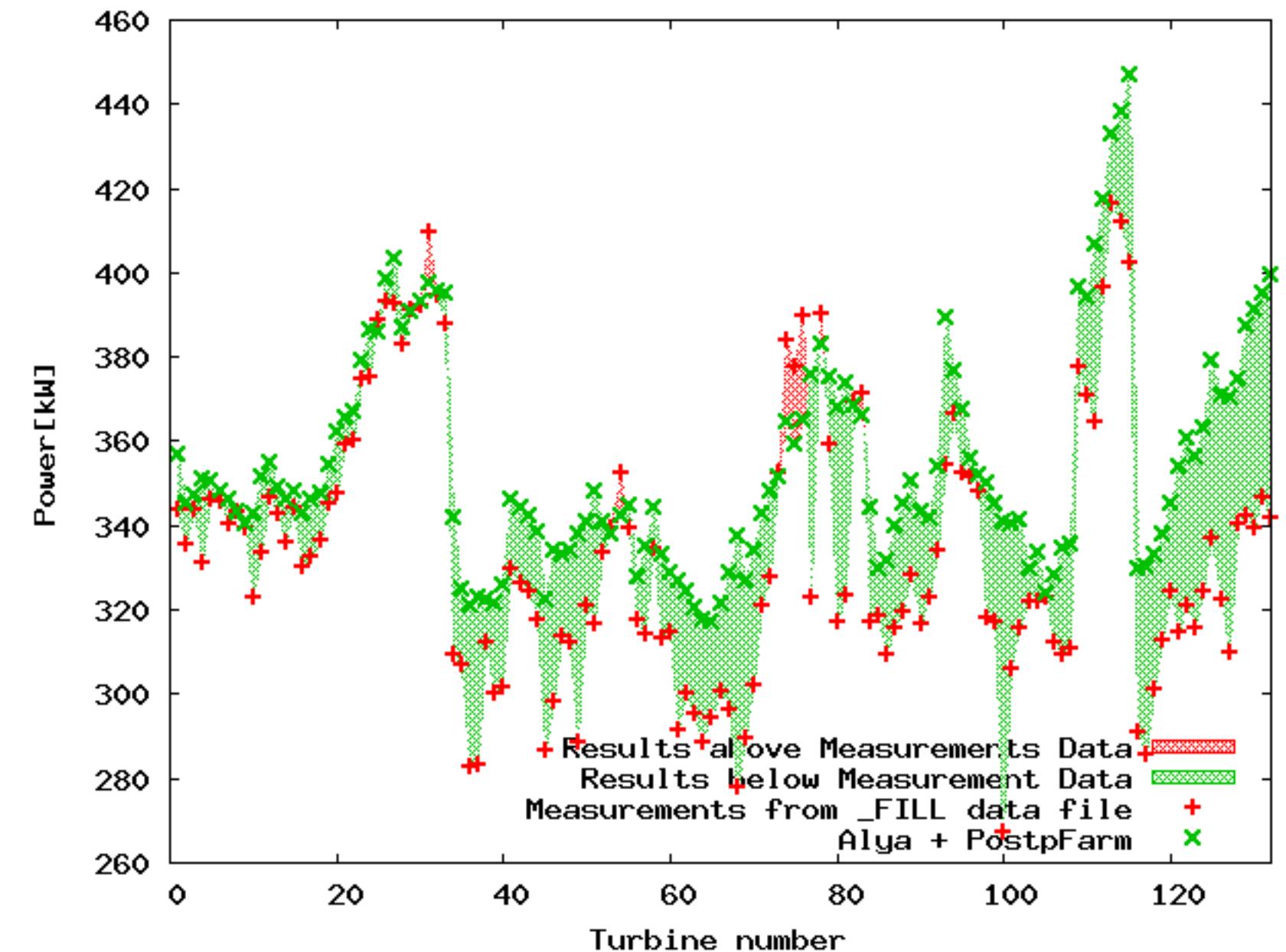
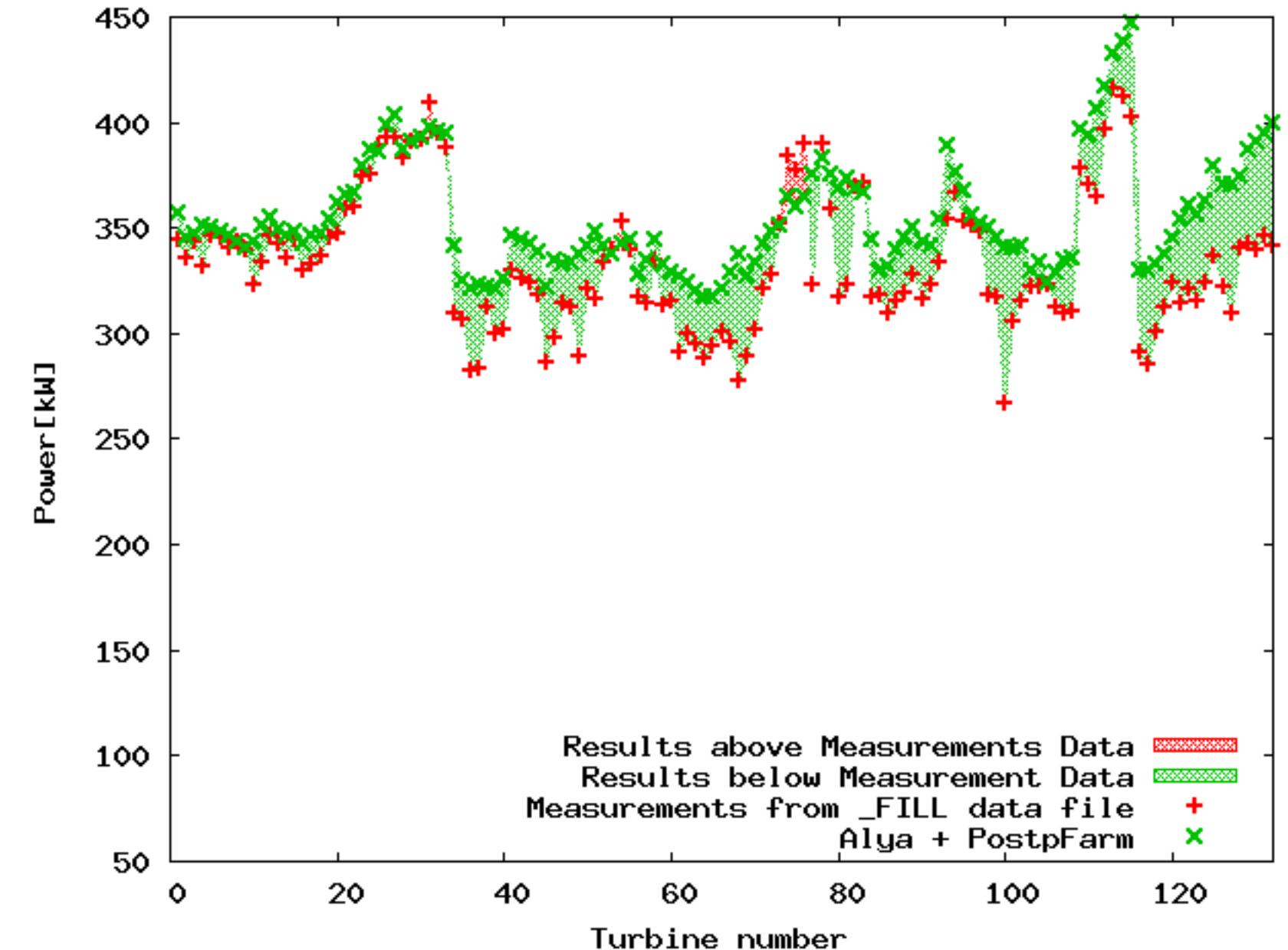
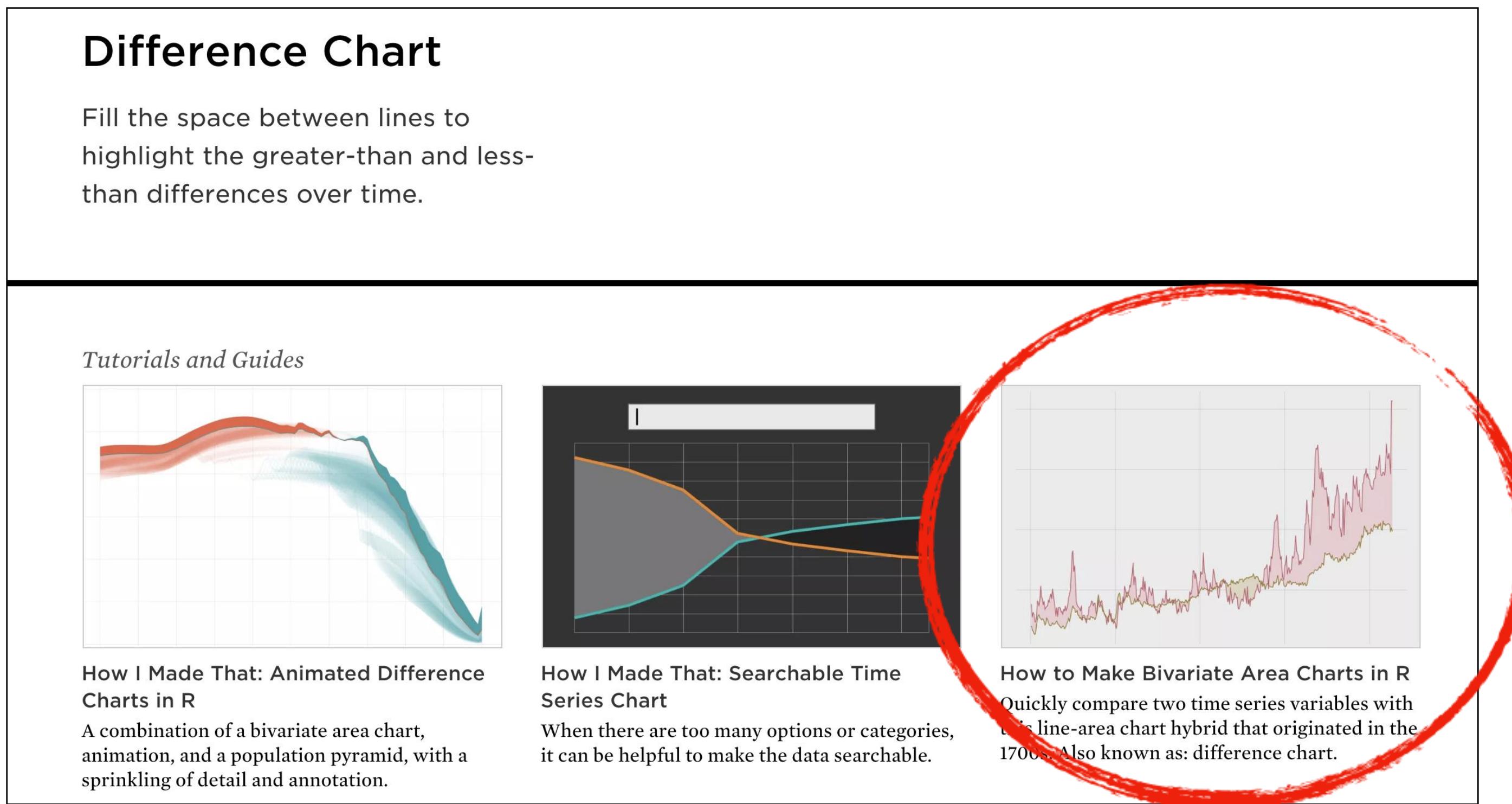
# Difference Chart

A.K.A. Bivariate Area Charts

Muestra dos líneas y la diferencia entre ambas

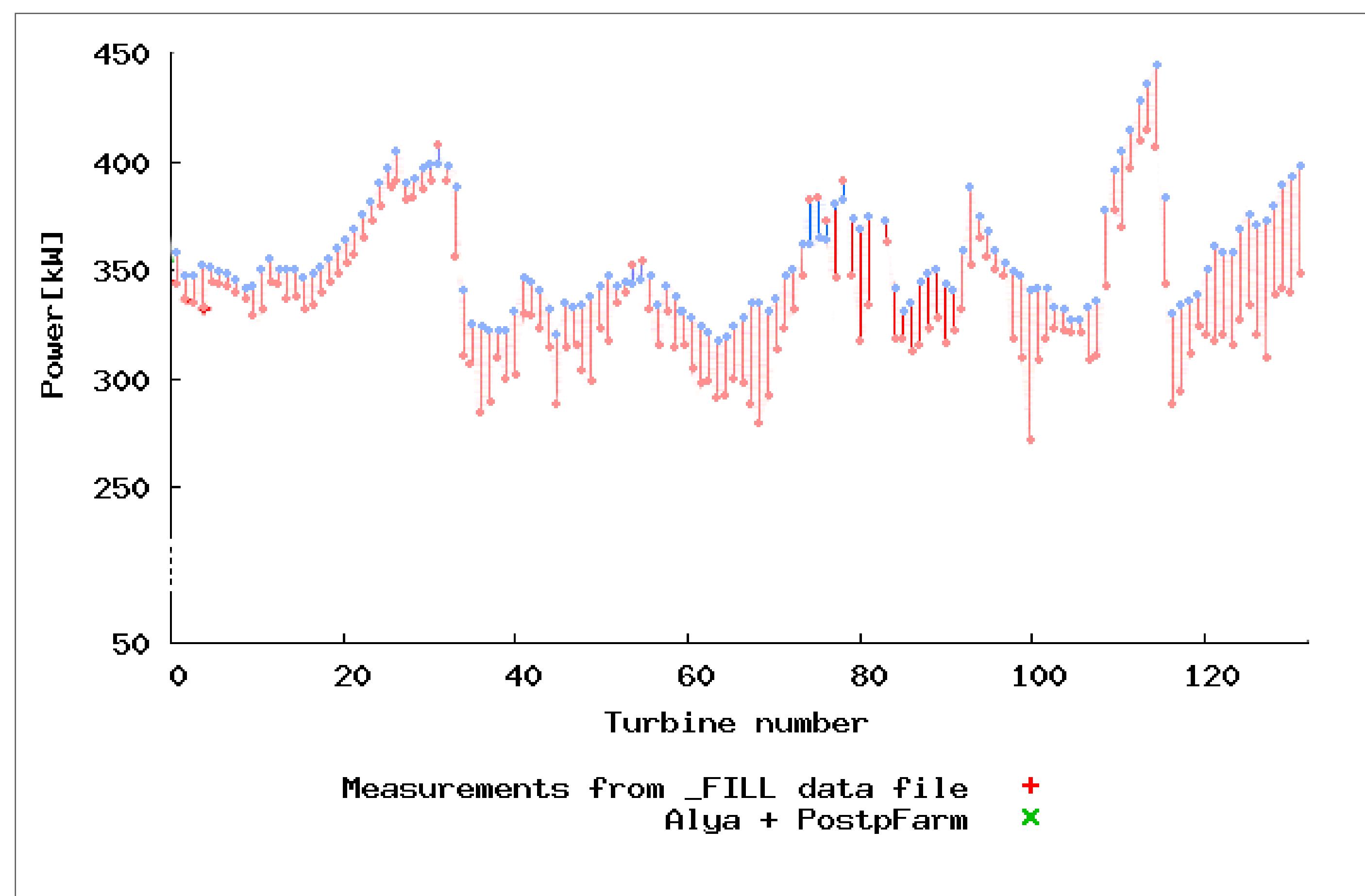
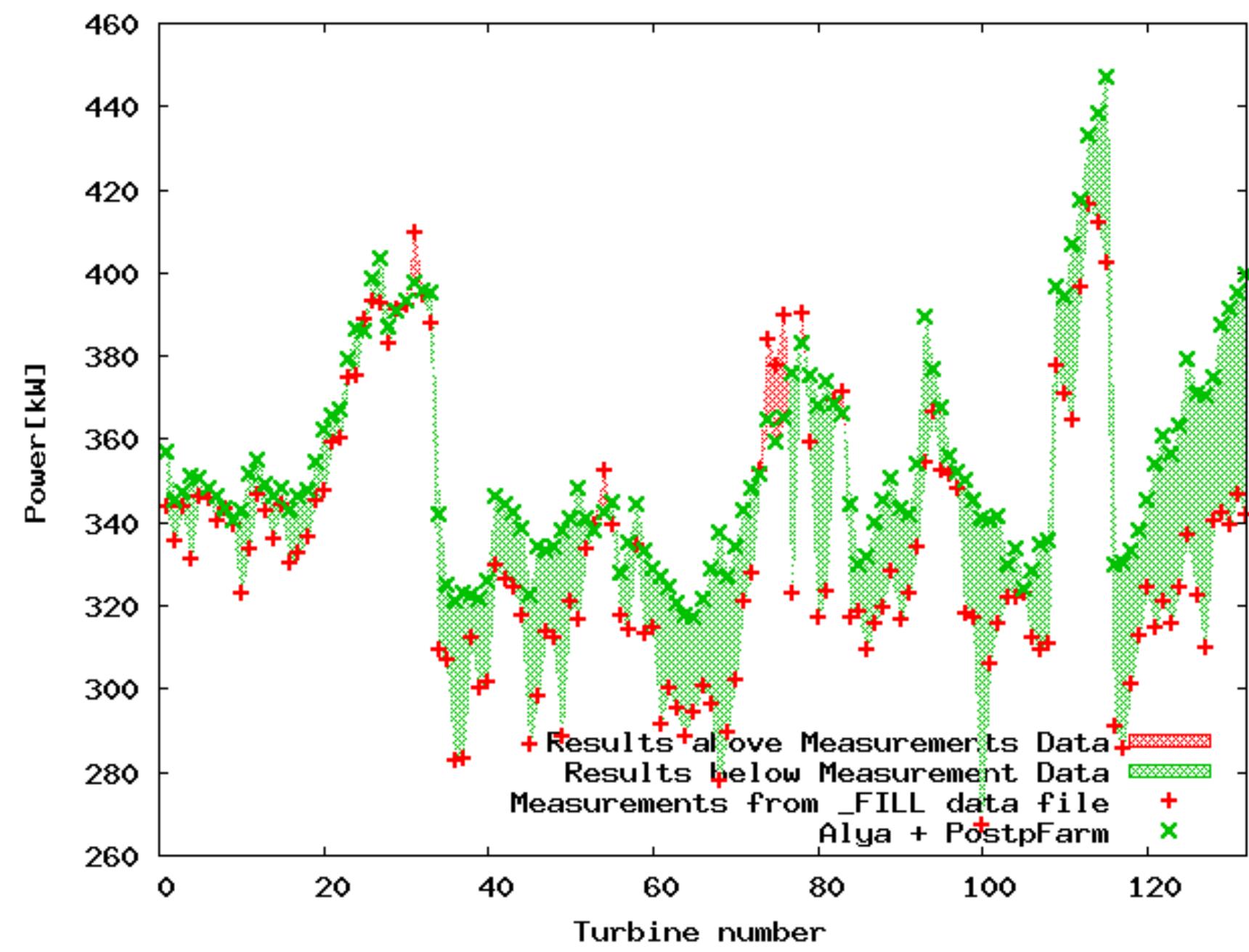
Colores distintos para diferencia positiva y negativa

Generalmente usado para datos continuos, normalmente series temporales



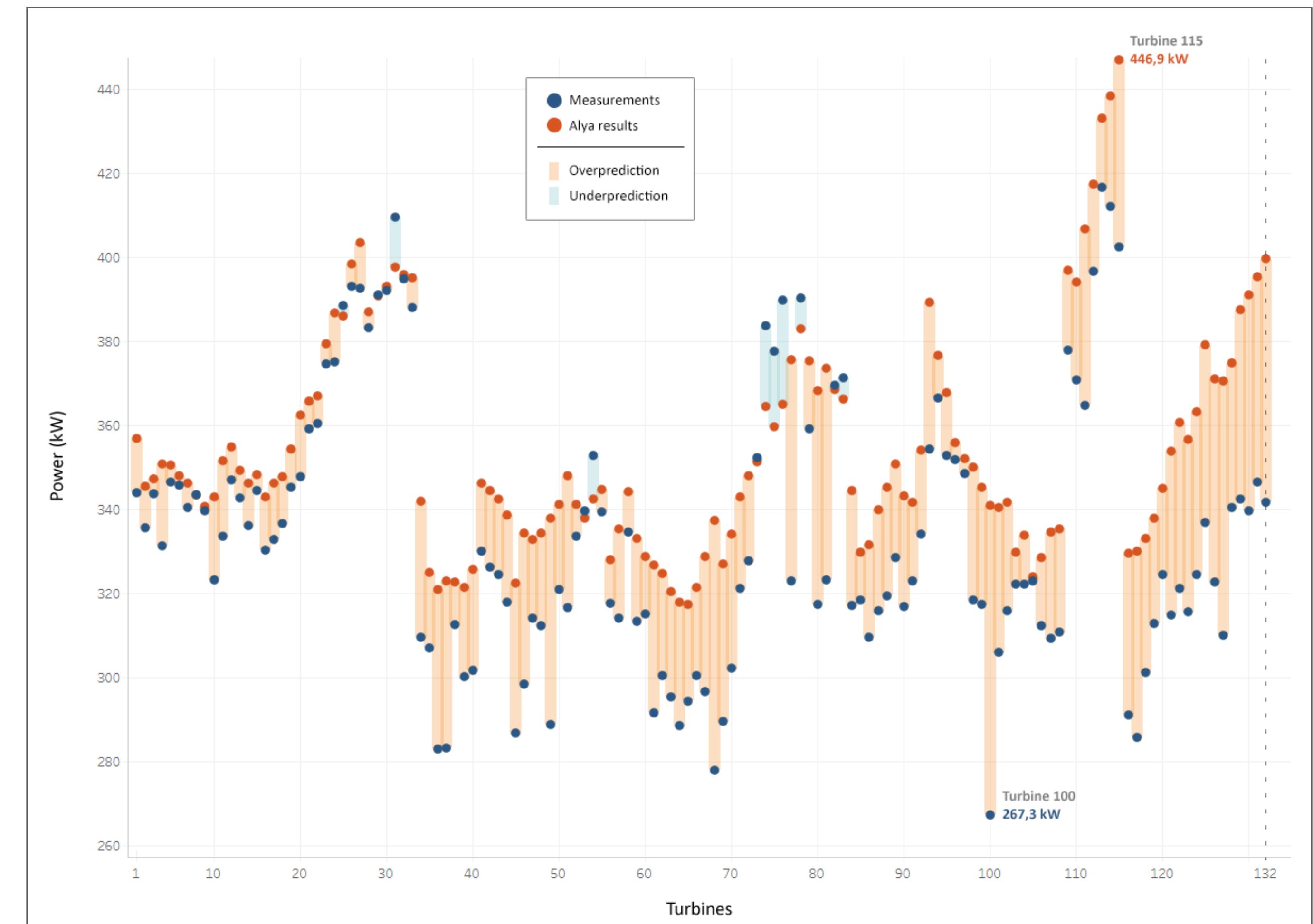
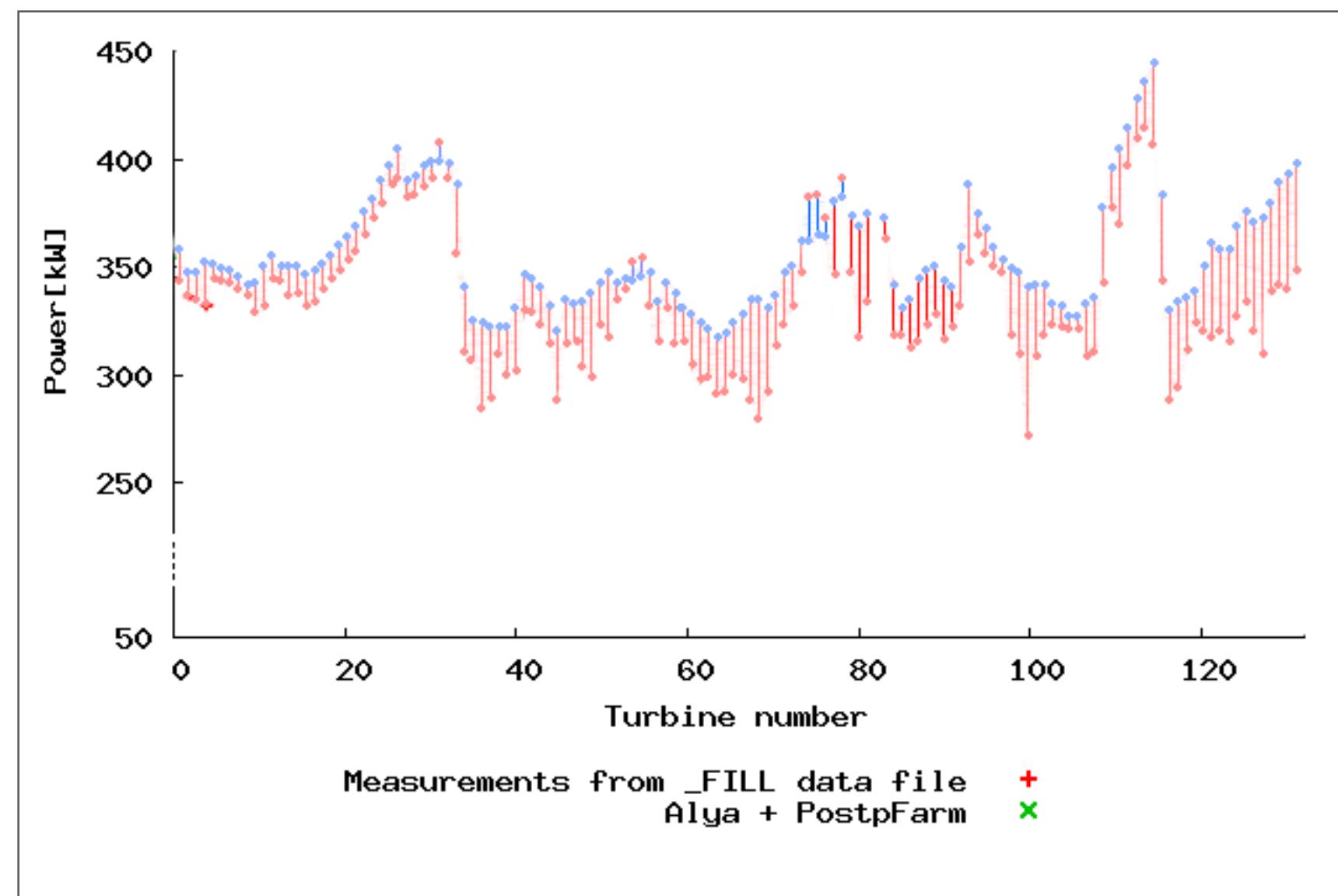
## Primer prototipo: Falso difference chart con puntos separados

- Hecho a mano en Adobe Illustrator
- Probar esquemas de color diferentes, evitar colores “semáforo”
- Romper la continuidad percibida de un line chart



## Segundo prototipo: Datos reales en Tableau Public y exportado a Illustrator

- Escoge tu herramienta
- Re-ajustar colores (puntos más oscuros que las líneas)
- **Exportar SVG** a software de diseño
- Añadir anotaciones, crear legend box, ajustar ejes. Cualquier tarea que no dependa del número de elementos

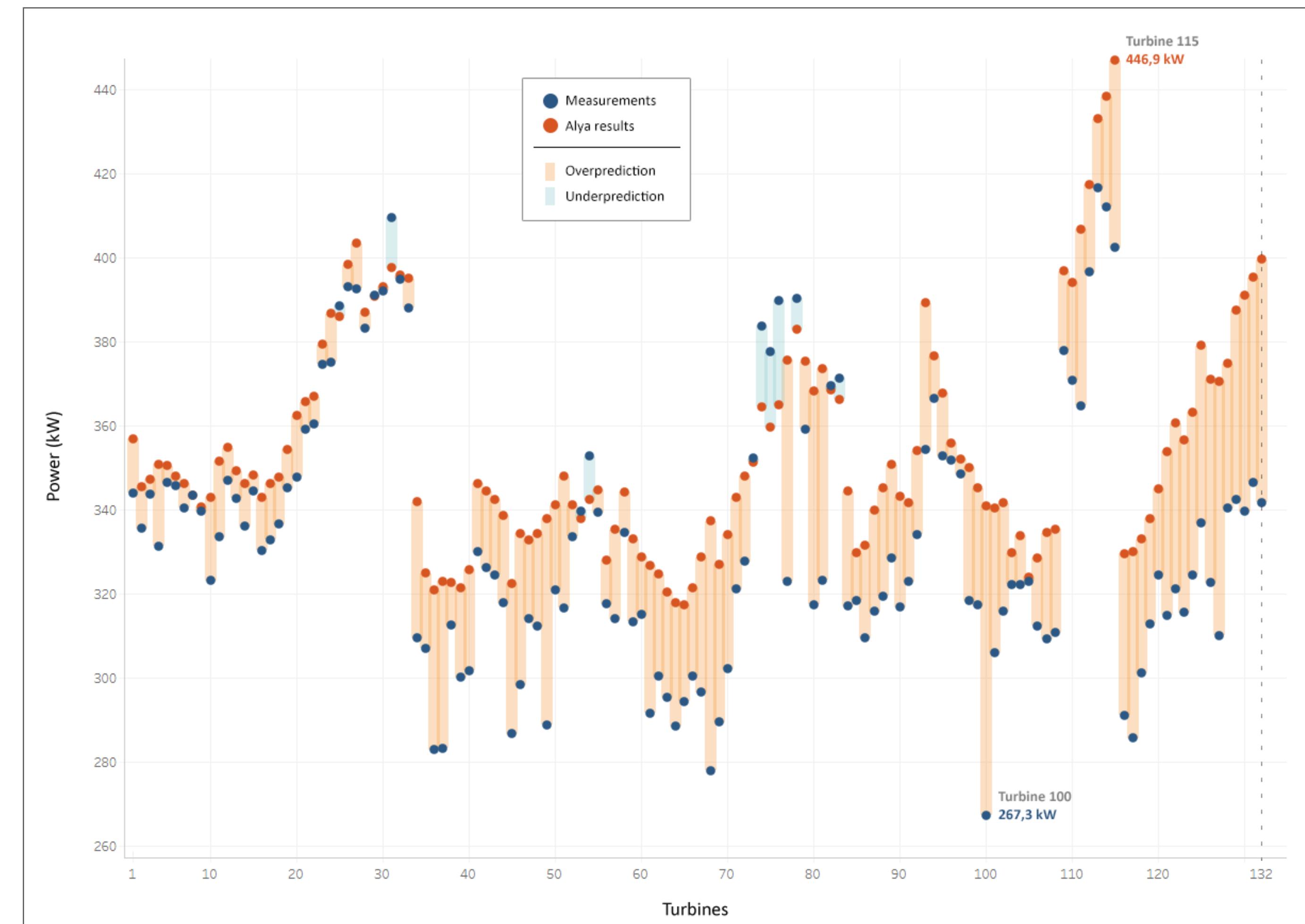


## Second prototype: Real data in Tableau Public

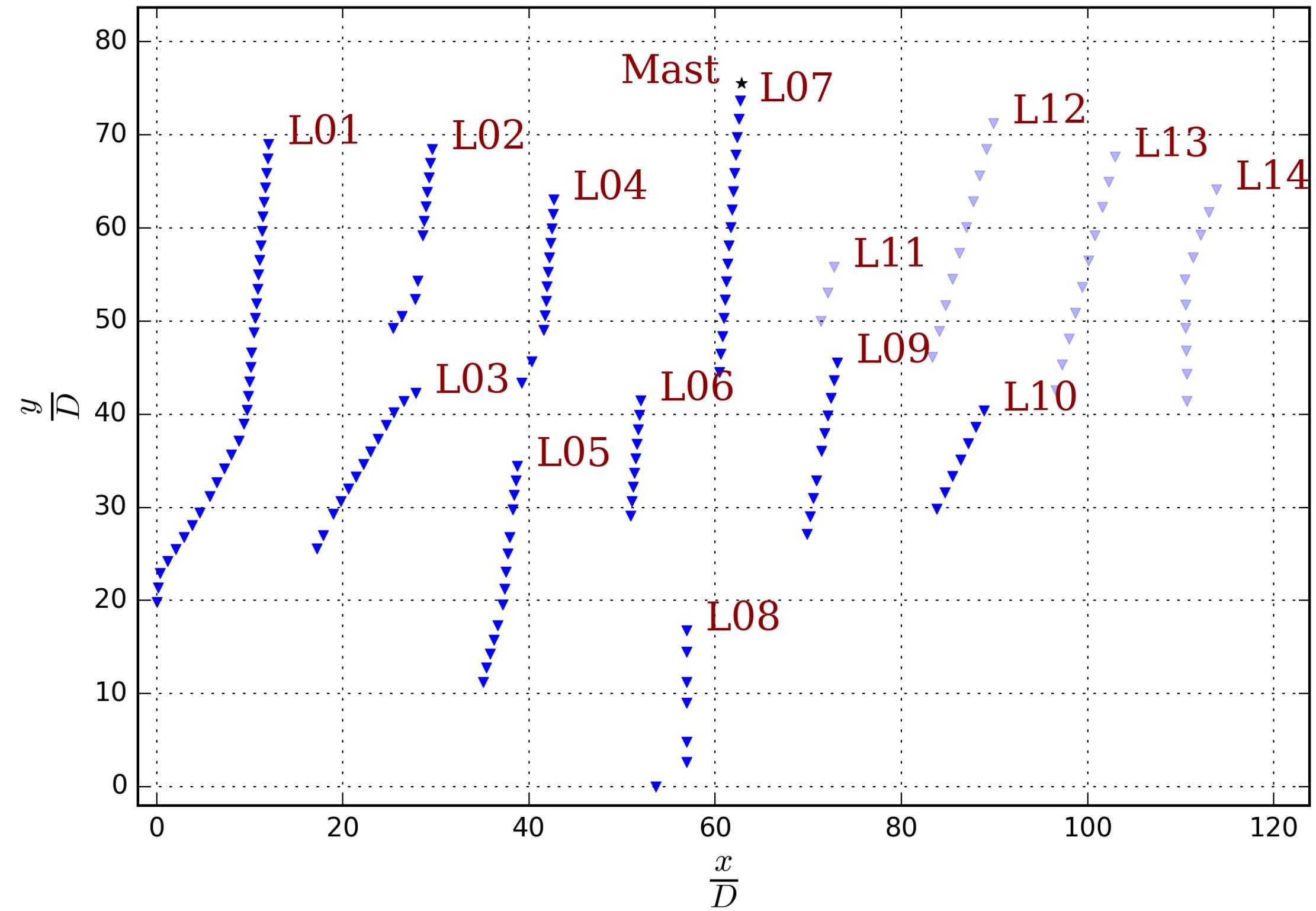
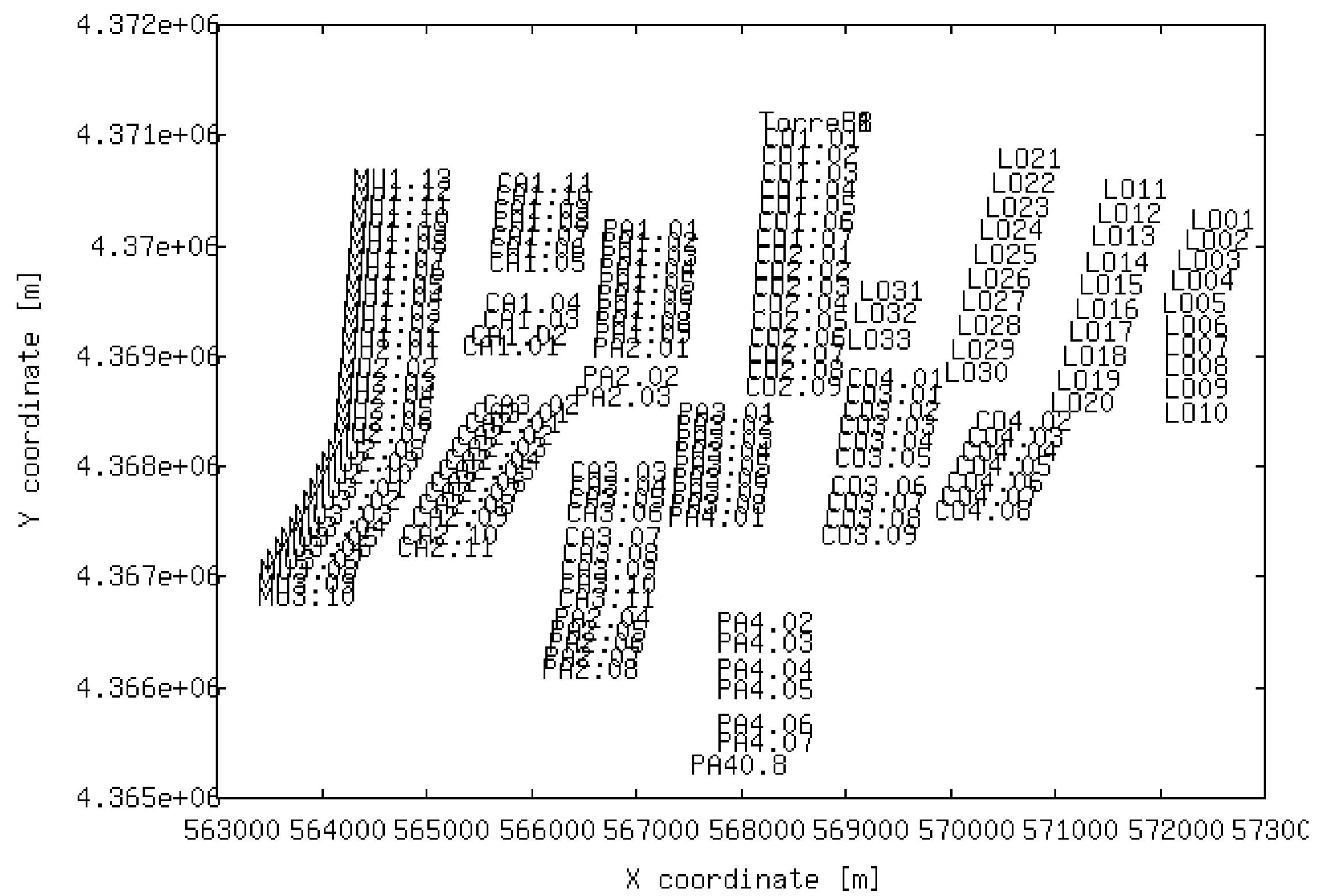
Cual es el desafío?

Resaltar las diferencias entre valores y aclarar qué se representa en cada eje

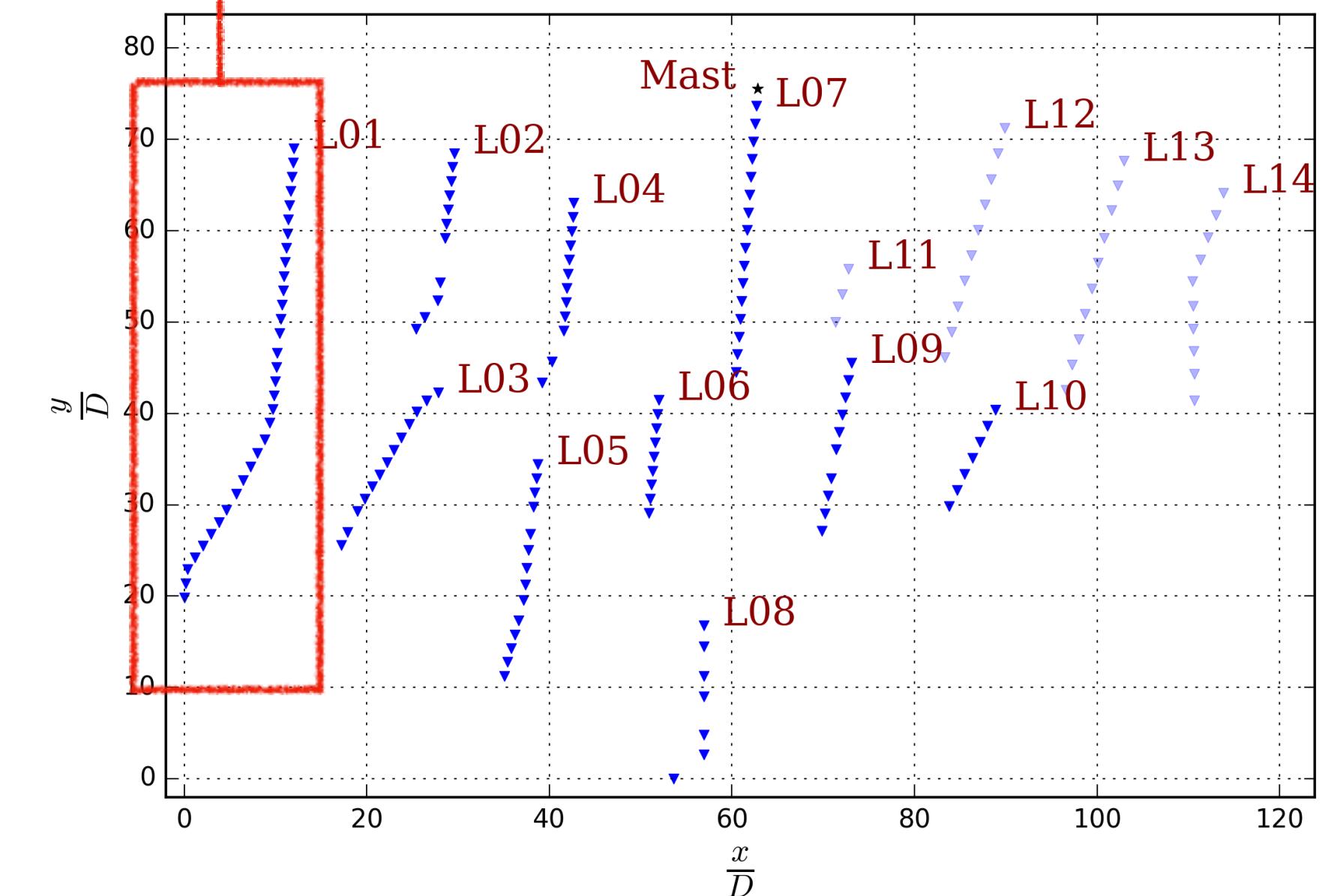
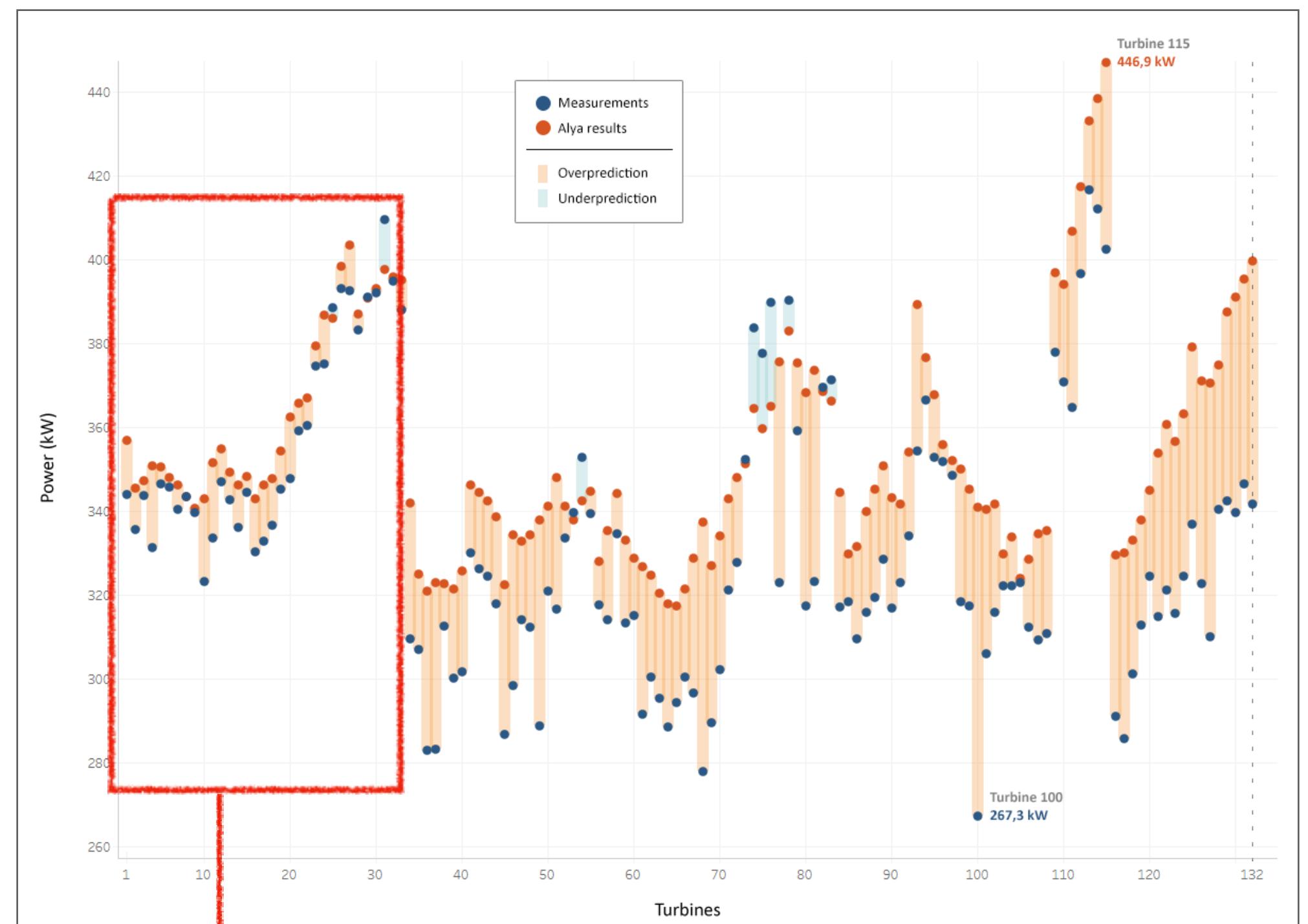
Un eje progresivo no funciona para el número de turbina: se asocia a datos continuos



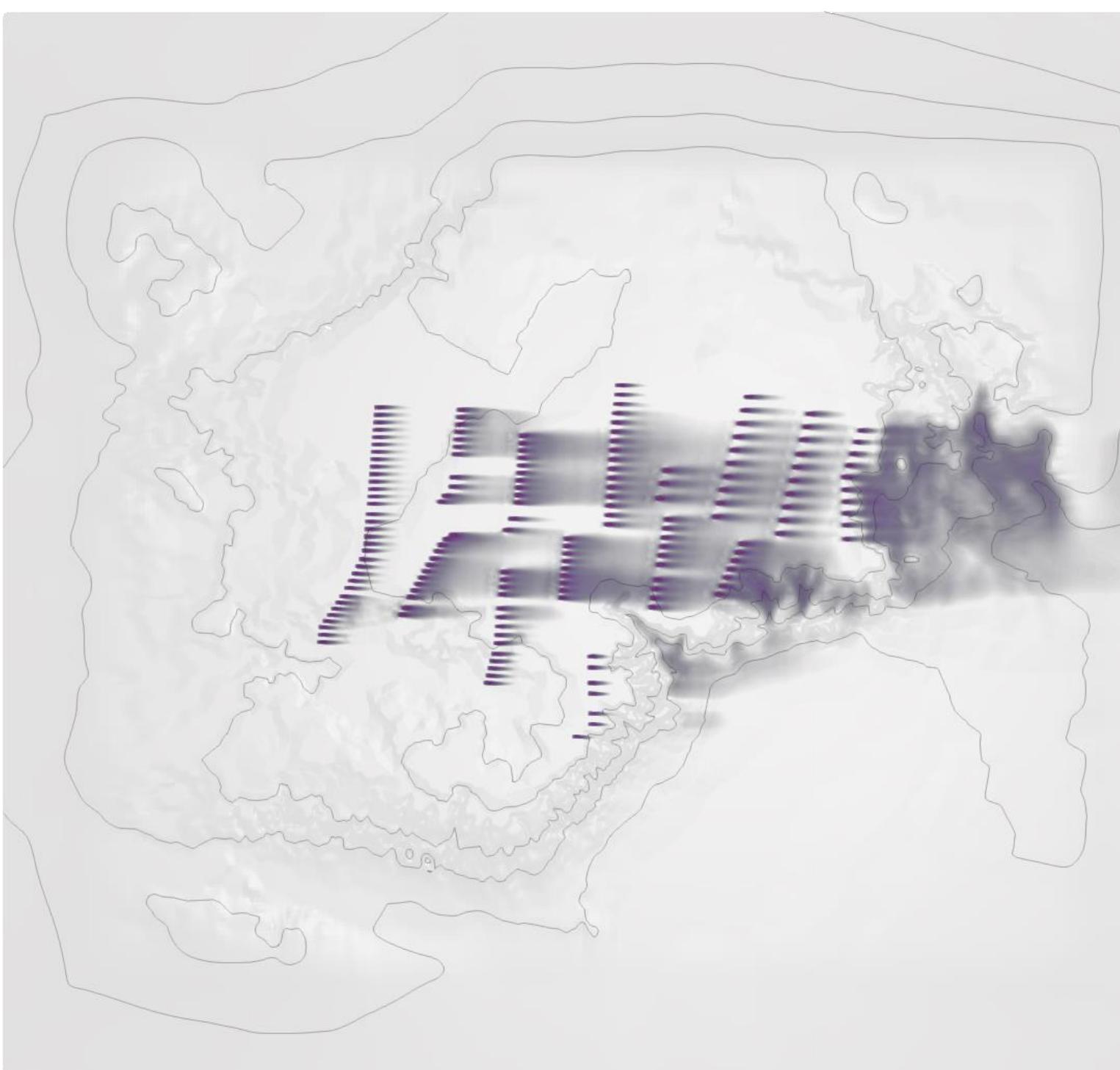
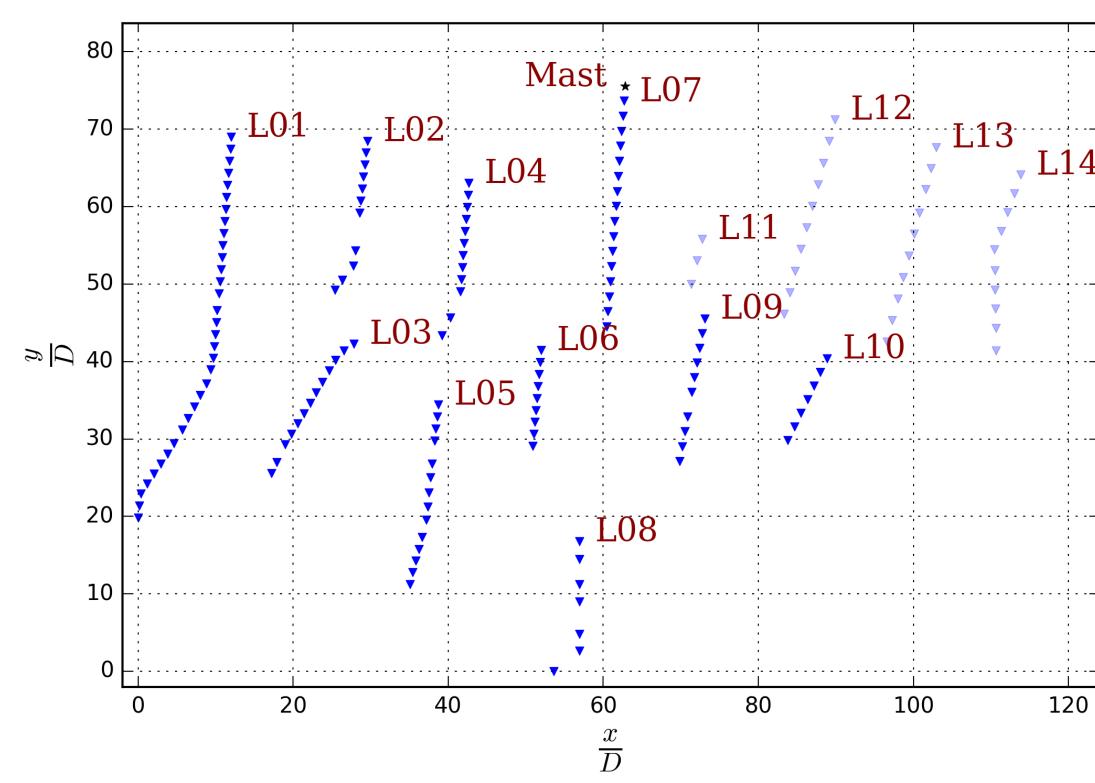
Witness point location



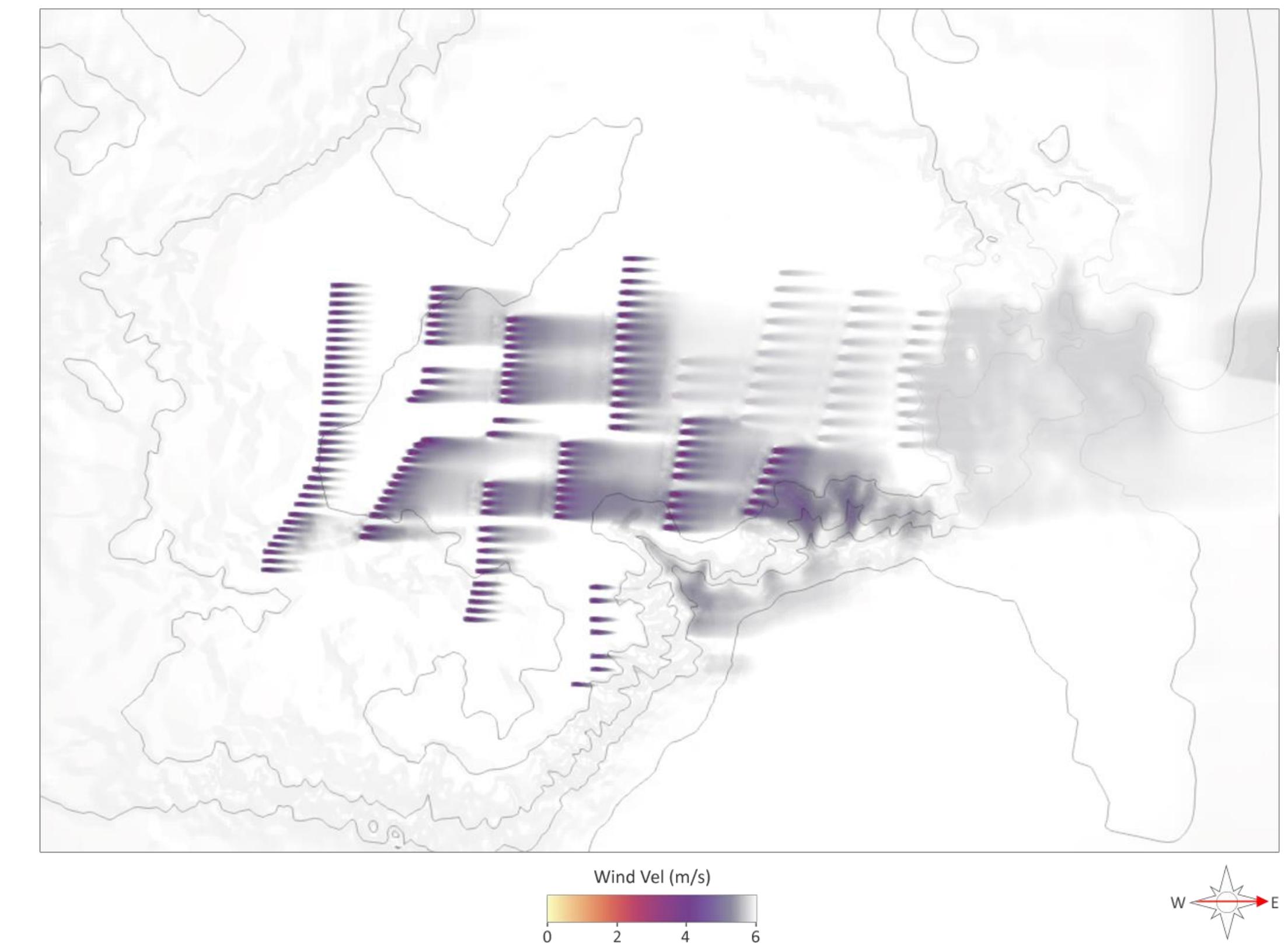
- Unir las gráficas para eliminar el eje X
- Rompe la continuidad y permite comparar diferencias
- Explorar la relación entre potencia generada y localización puede aportar otra perspectiva

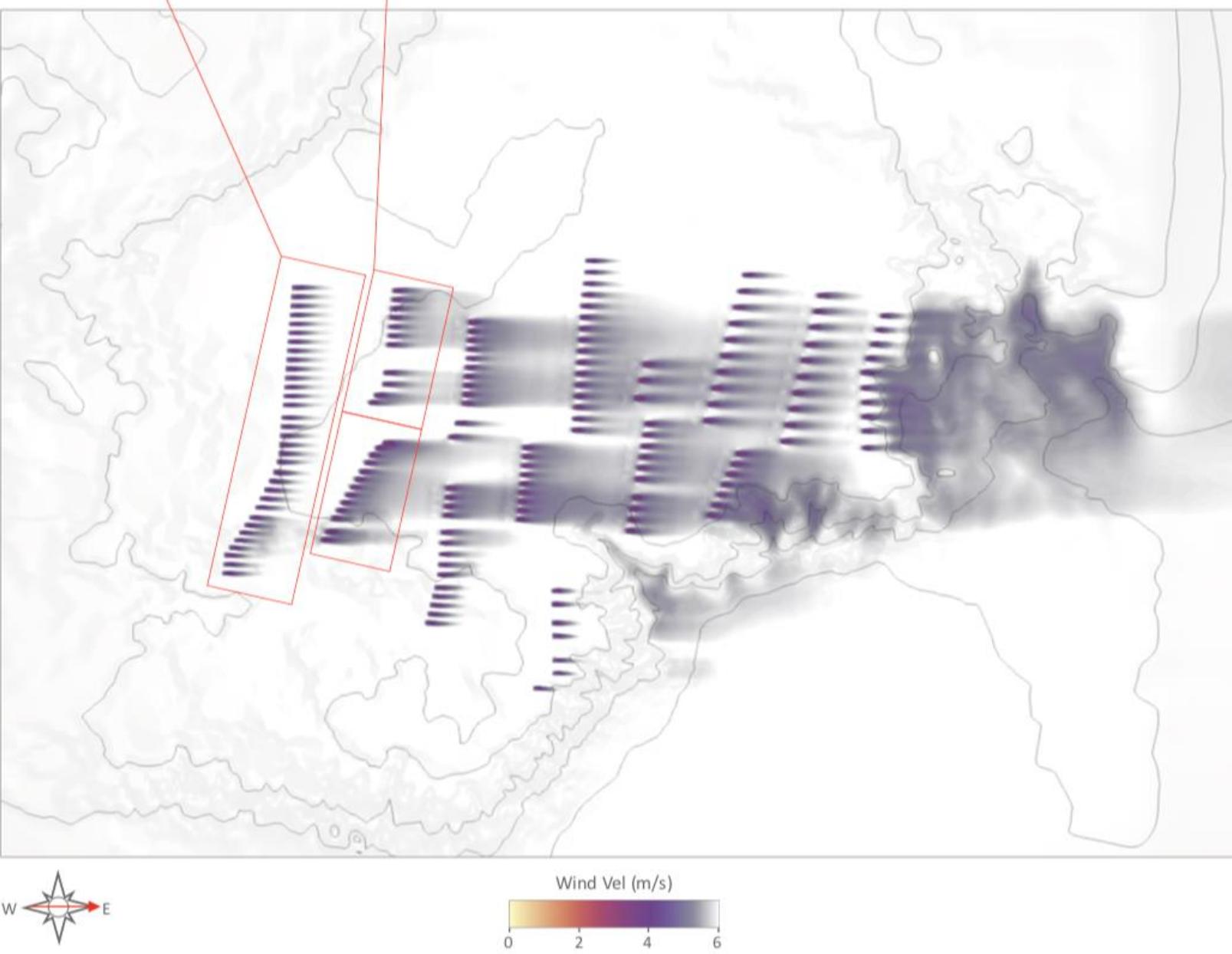
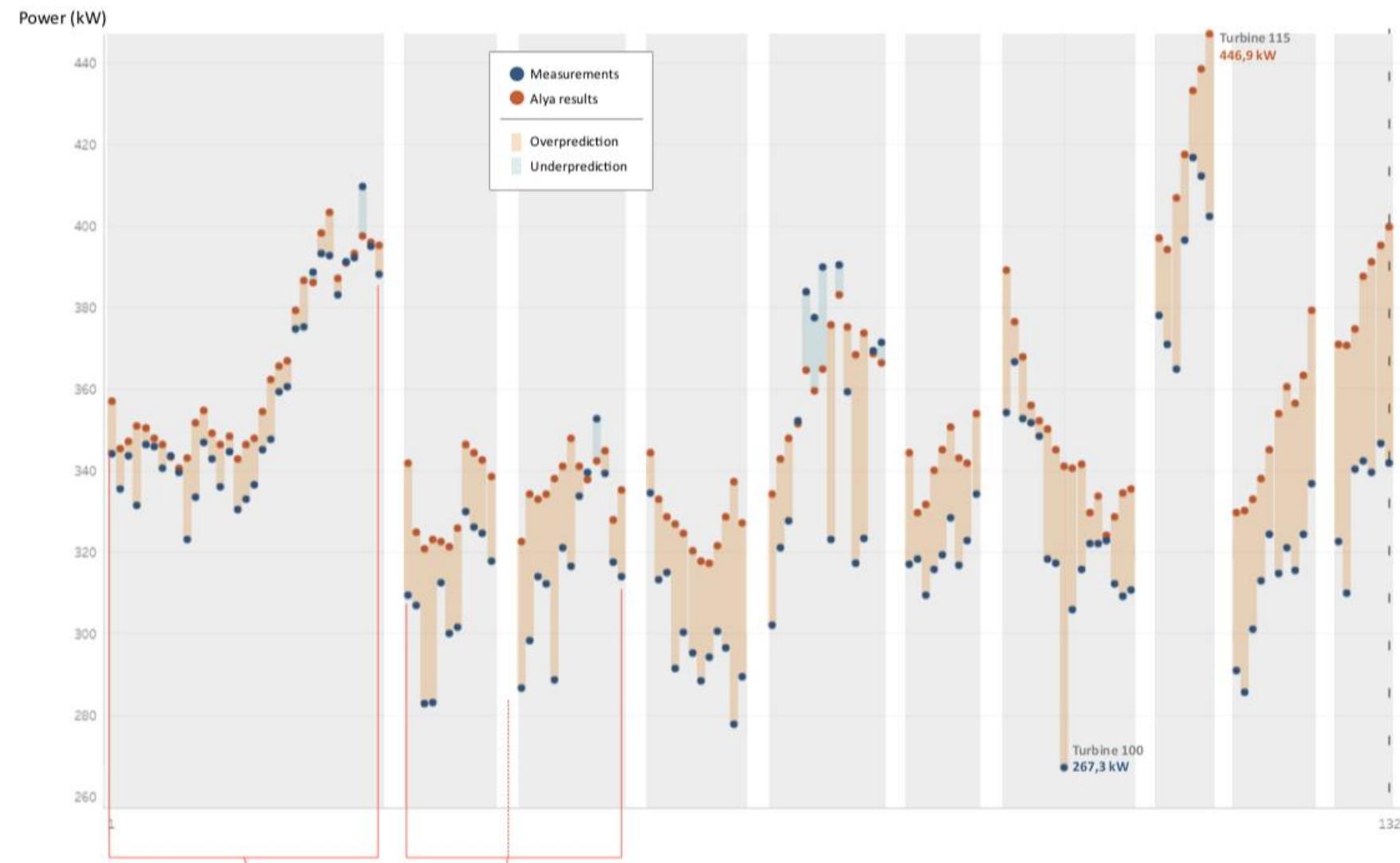
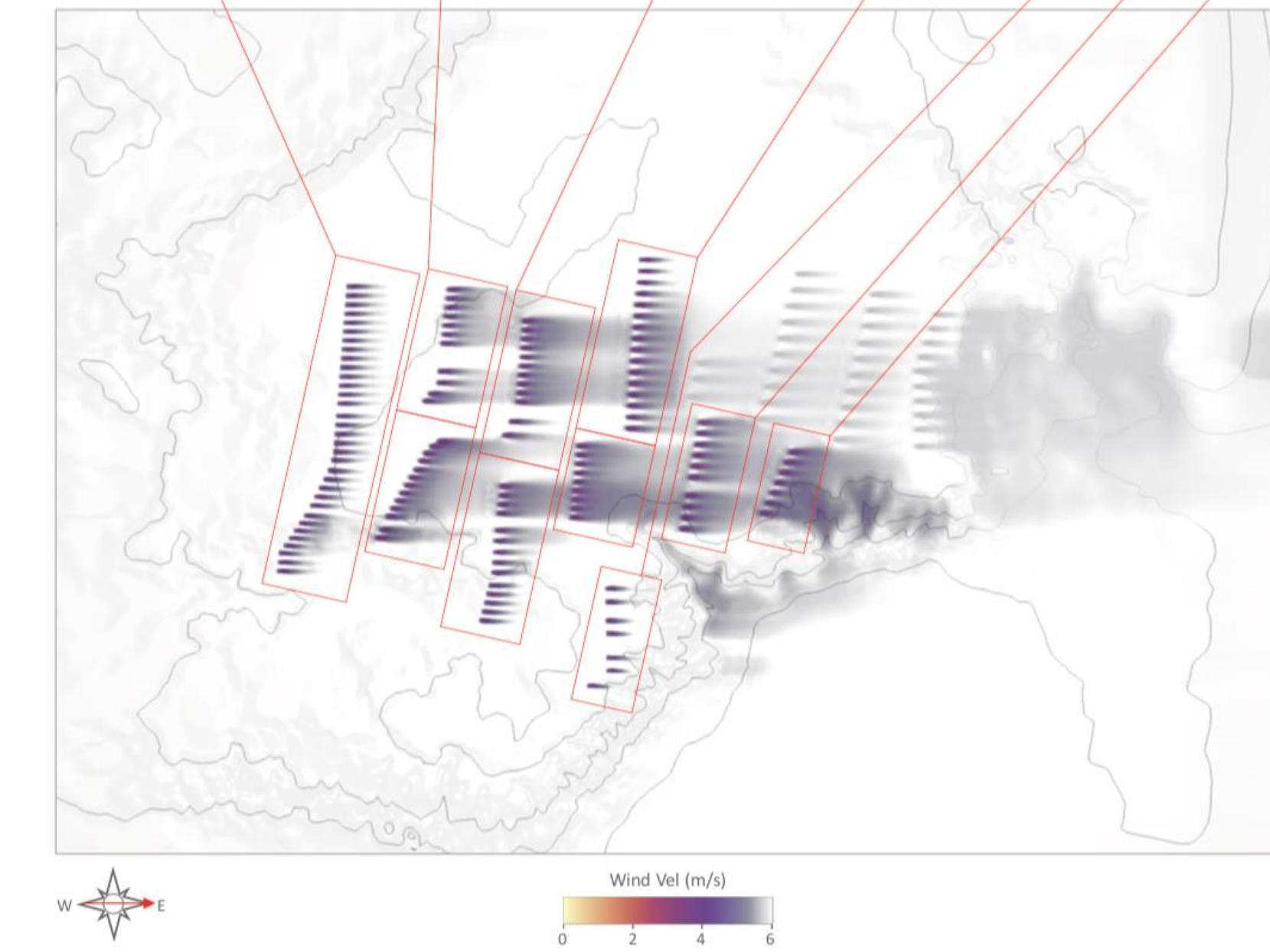
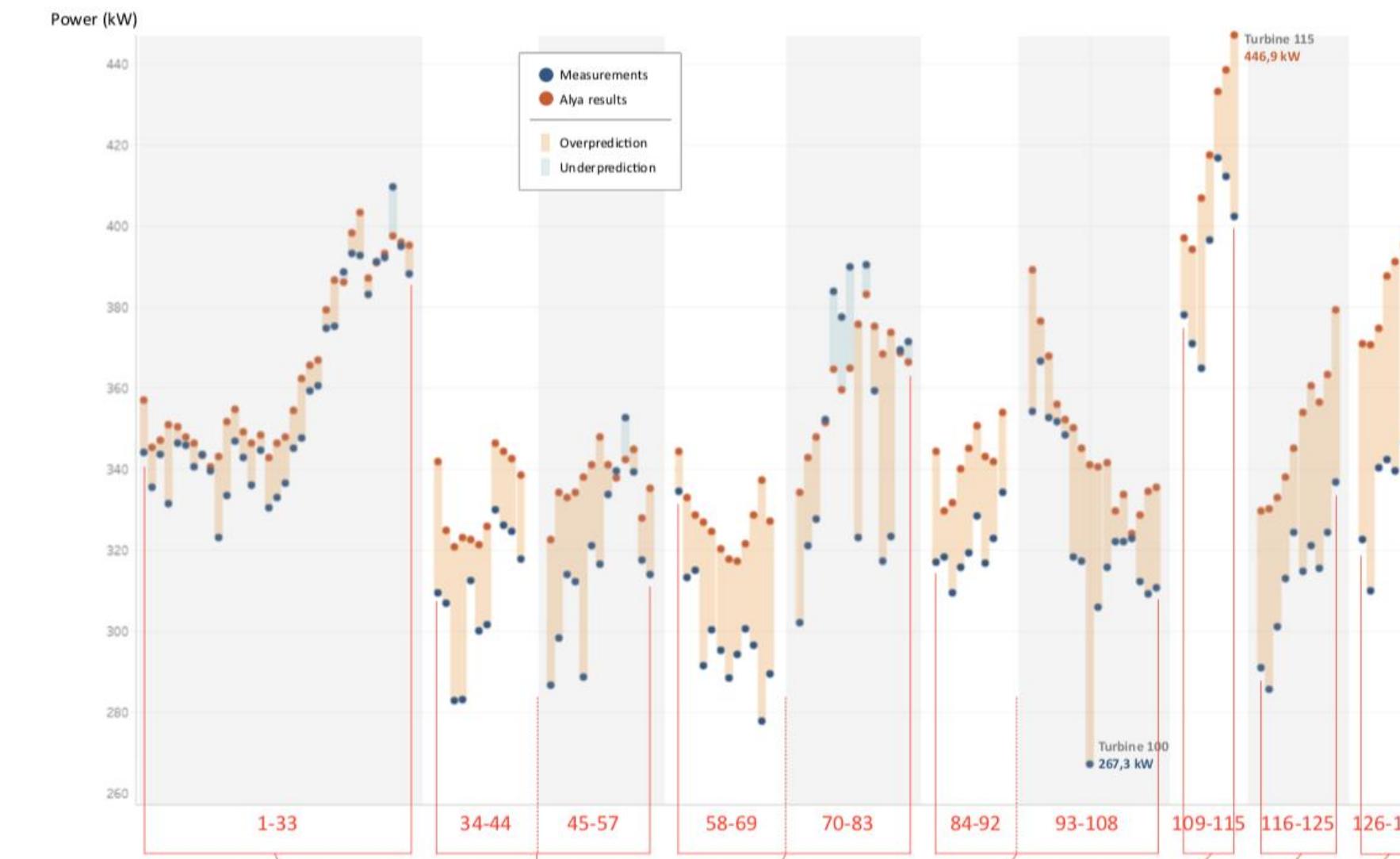


Original de Paraview (Sci-Viz software)

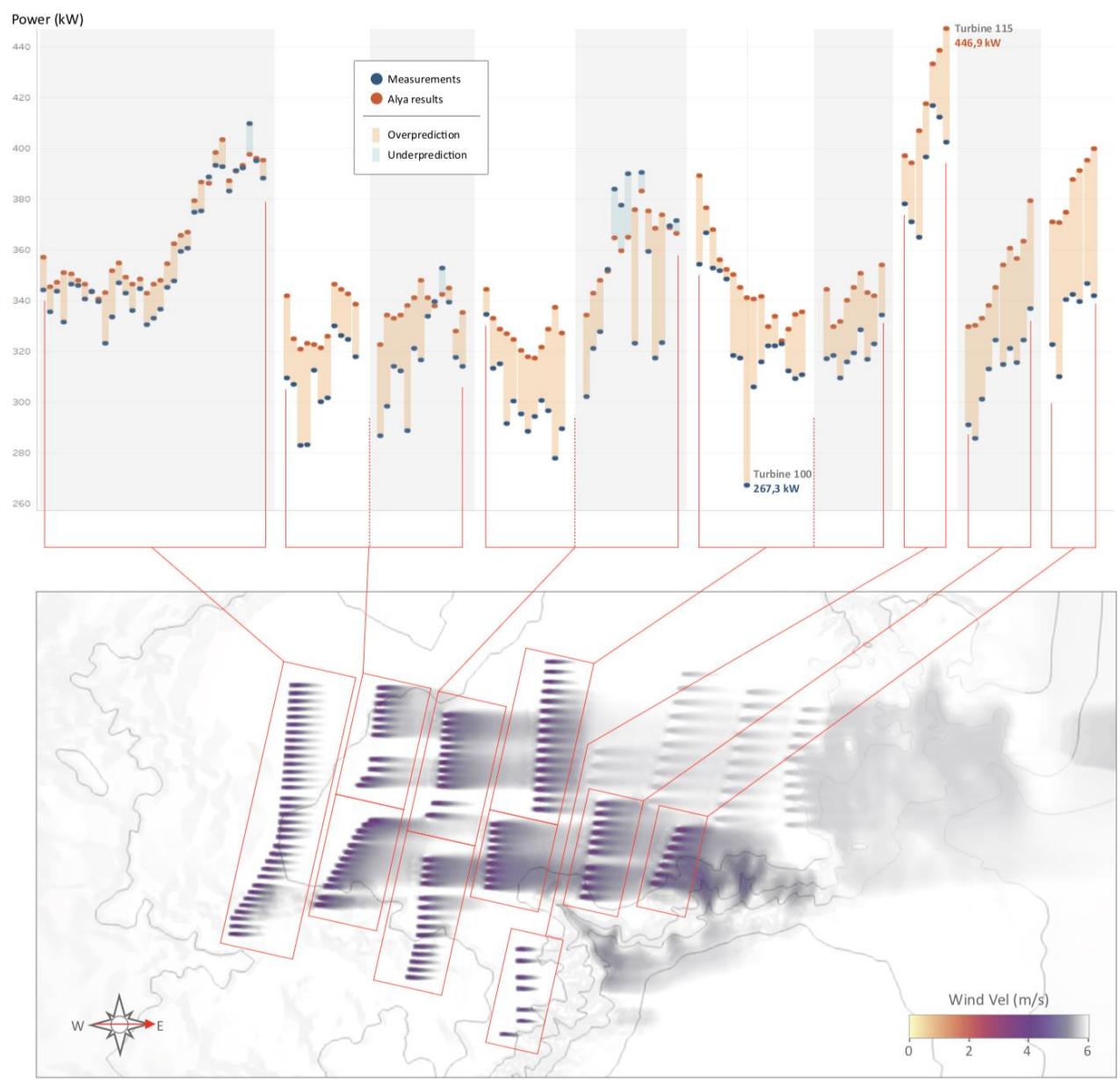


Escala de color, orientación, y ajustes de imagen en Illustrator



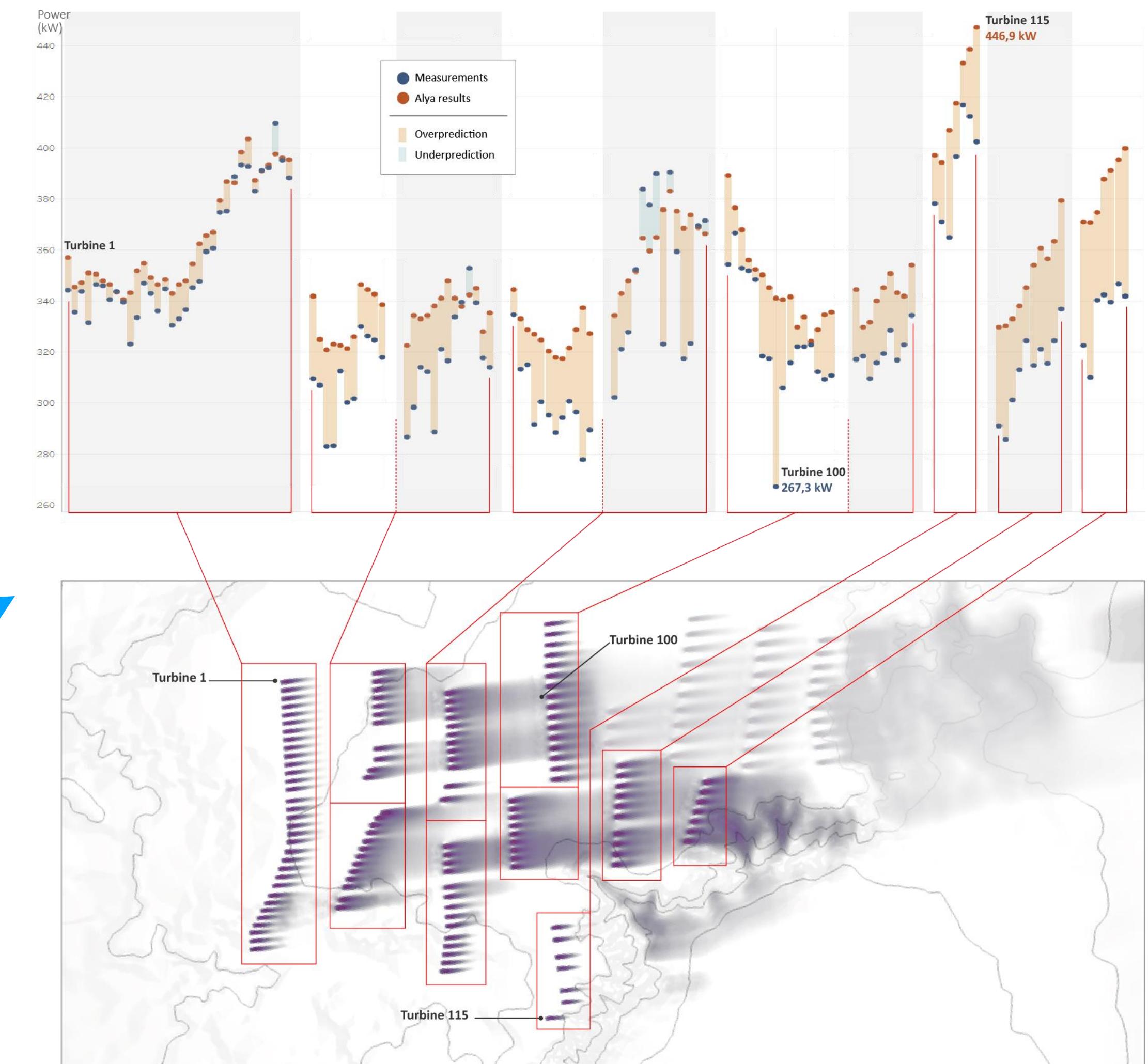
**V1****V2**

V4



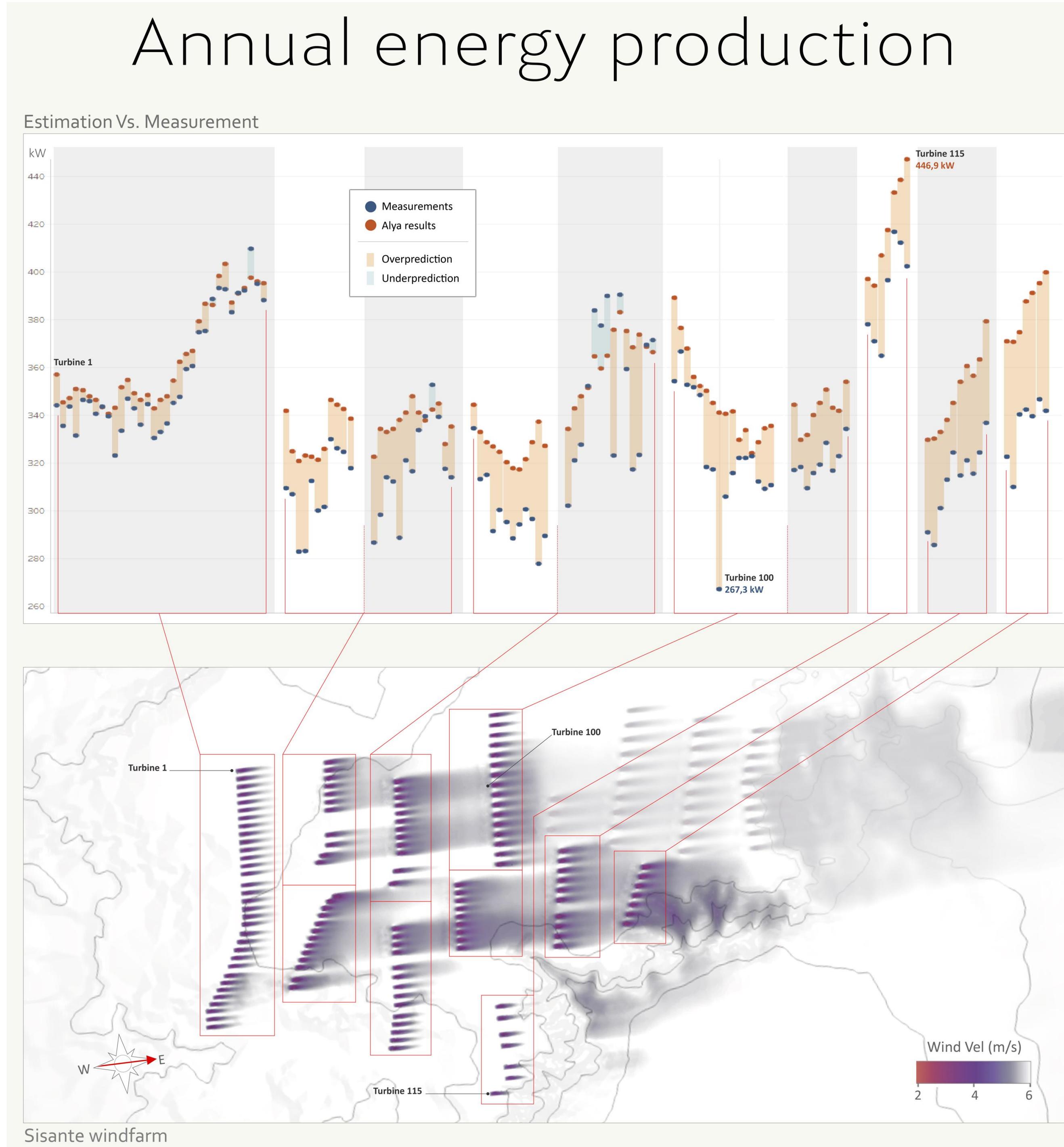
- Rotar mapa para poner los recuadros rectos
- Sustituir eje X por los cuadros rojos
- Marcar el primero, el último y los molinos con valores extremos en ambas gráficas para indicar el orden de lectura

V7



## Imagen Final

- Enmarcar y separar las gráficas para facilitar legibilidad: no es un plot único
- Color de fondo claro para resaltar gráficas (poco contraste)
- Título y subtítulo: Jugar con tamaño y cuerpo para establecer jerarquía del póster
- Ventaja: Muestra la relación entre la turbulencia y la exactitud de los resultados. Efecto conocido por los investigadores, pero es un buen modo de explicarlo a stakeholders

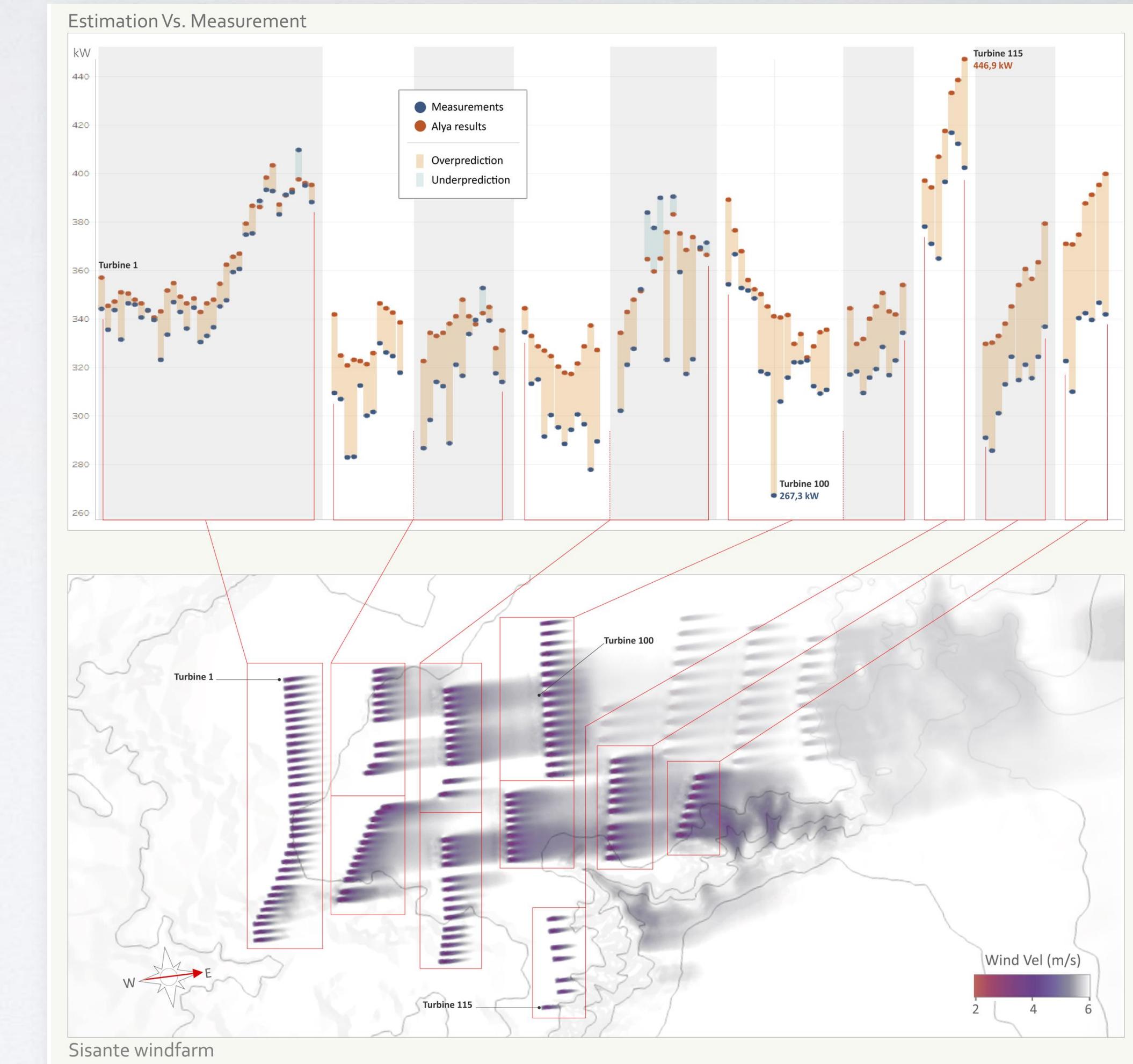
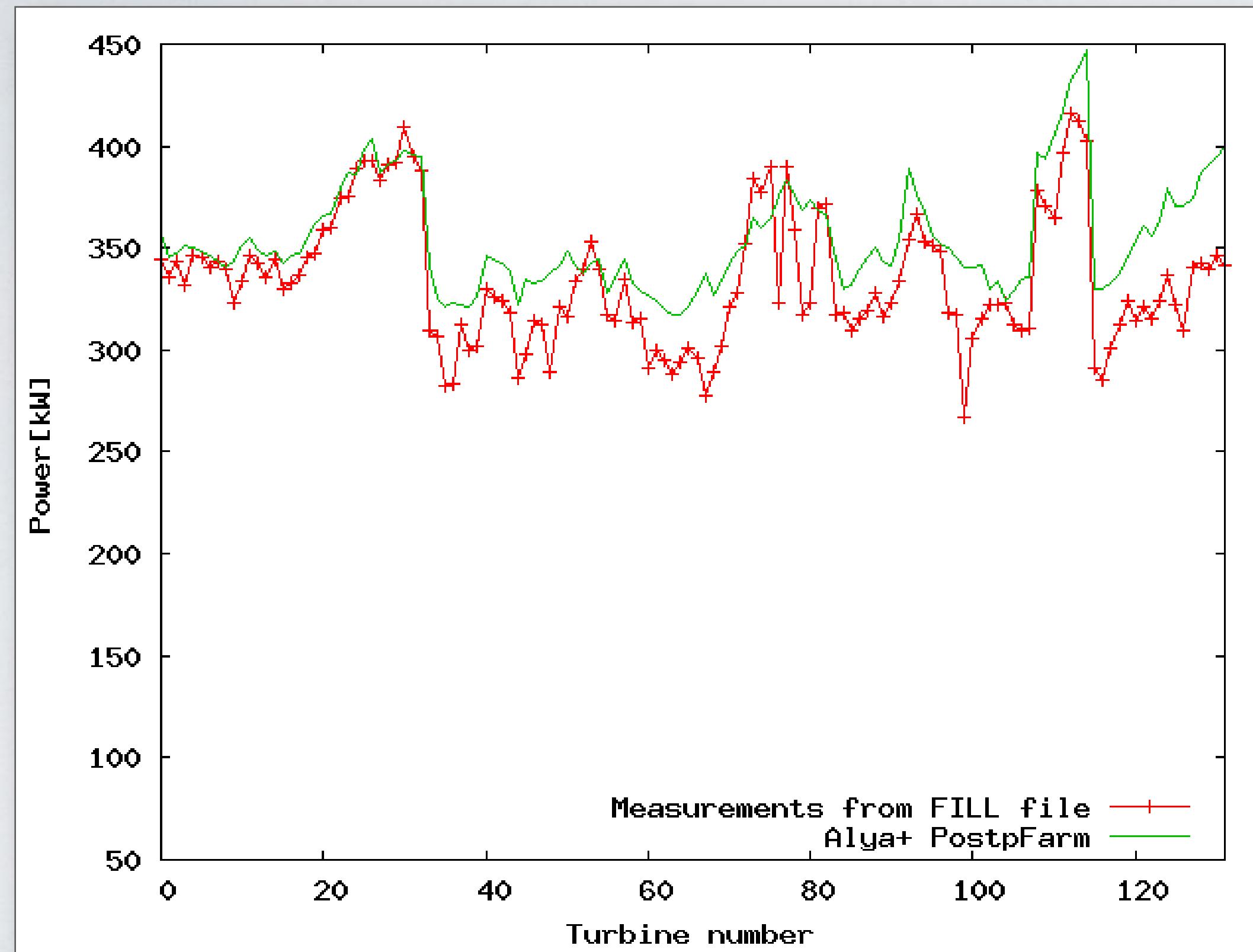


# Siempre hay un mensaje

My results somehow correlate to measurements

Vs.

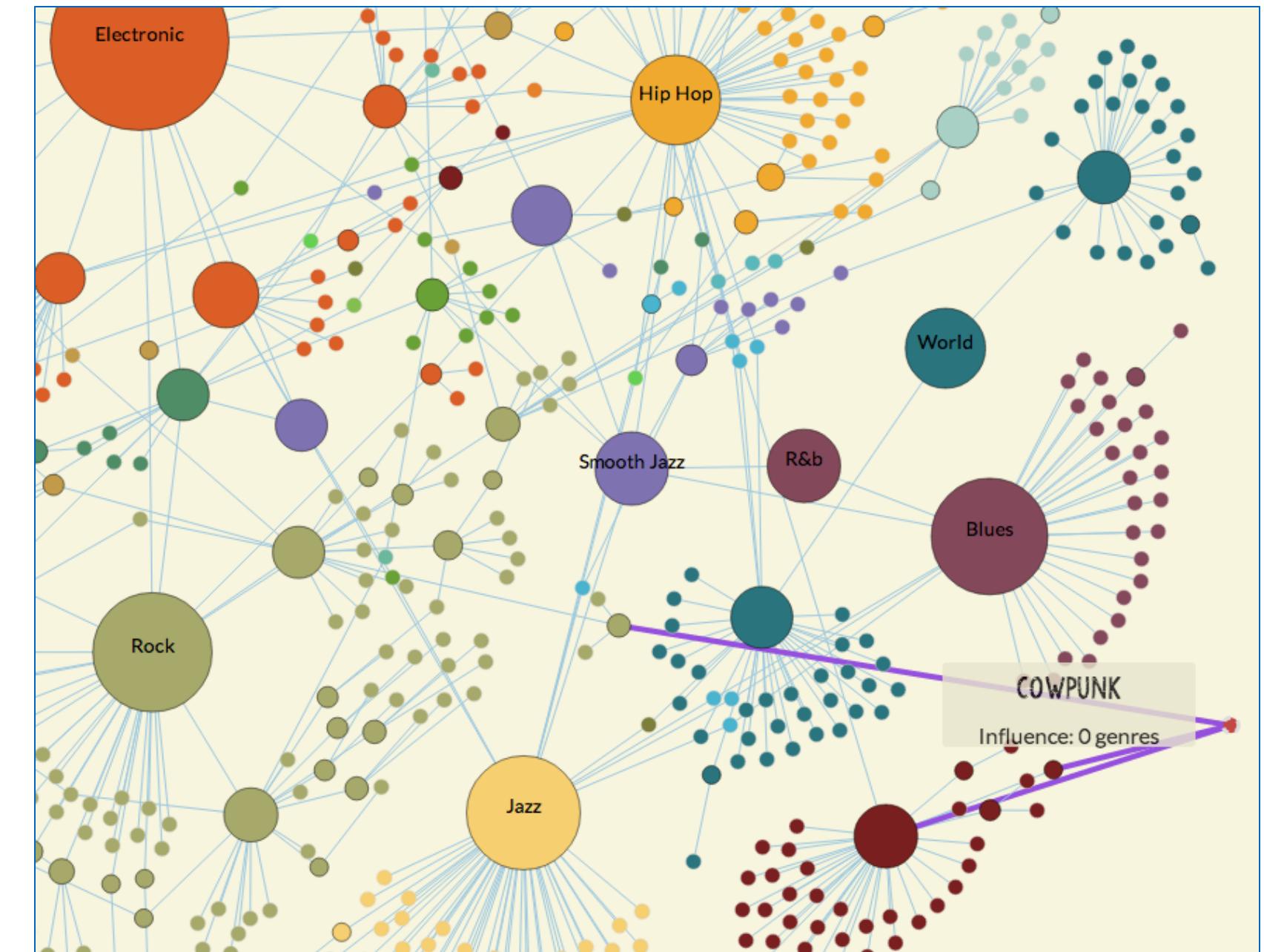
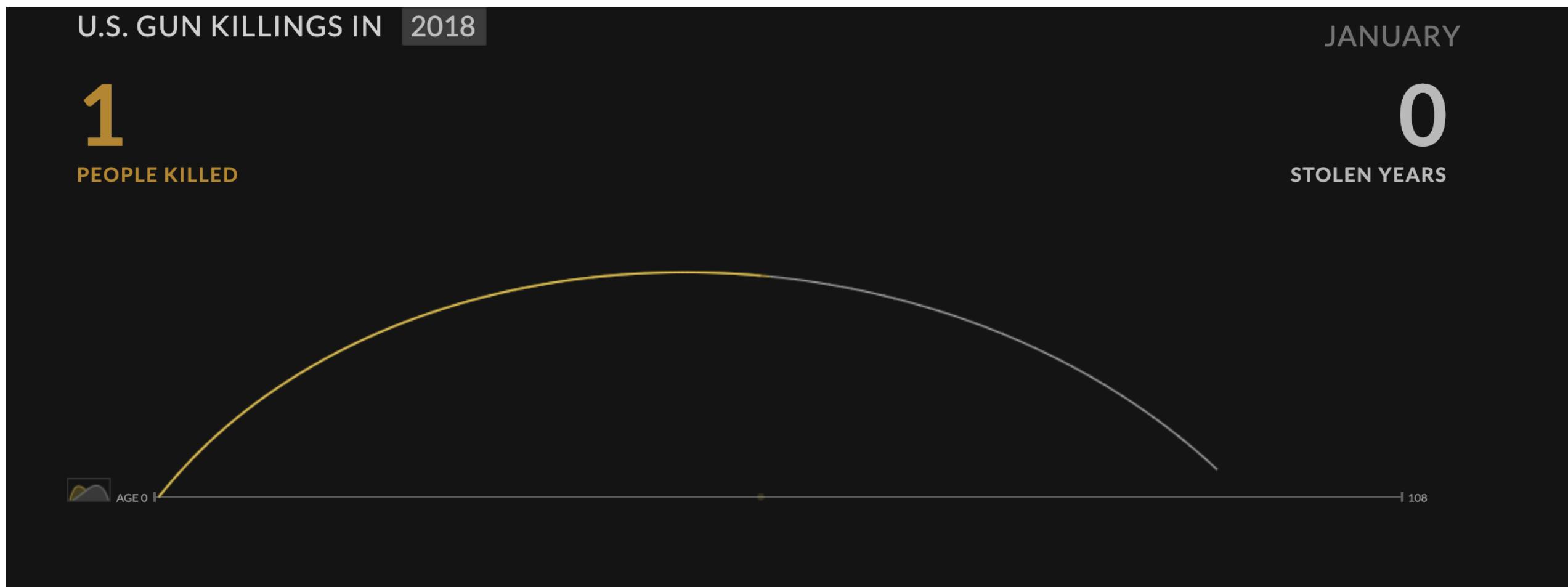
My model is not capturing turbulent wakes accurately



# Tres tipos de estructura narrativa aplicables a data viz

No tiene que ser una historia necesariamente

- Hay varias estrategias para ayudar al usuario a navegar por una visualización:
  - **Narración.** Anotaciones conectadas en una secuencia lógica
  - **Cerrada.** Estructura secuencial; mensaje definido
  - **Abierta.** Visualización exploratoria. Visualización como herramienta de búsqueda de narrativas
- **Historia.** Una narración con personajes, factor humano, drama/conflicto para obtener una respuesta emocional
- Gun killings in 2018. Periscopic <https://guns.periscopic.com/>



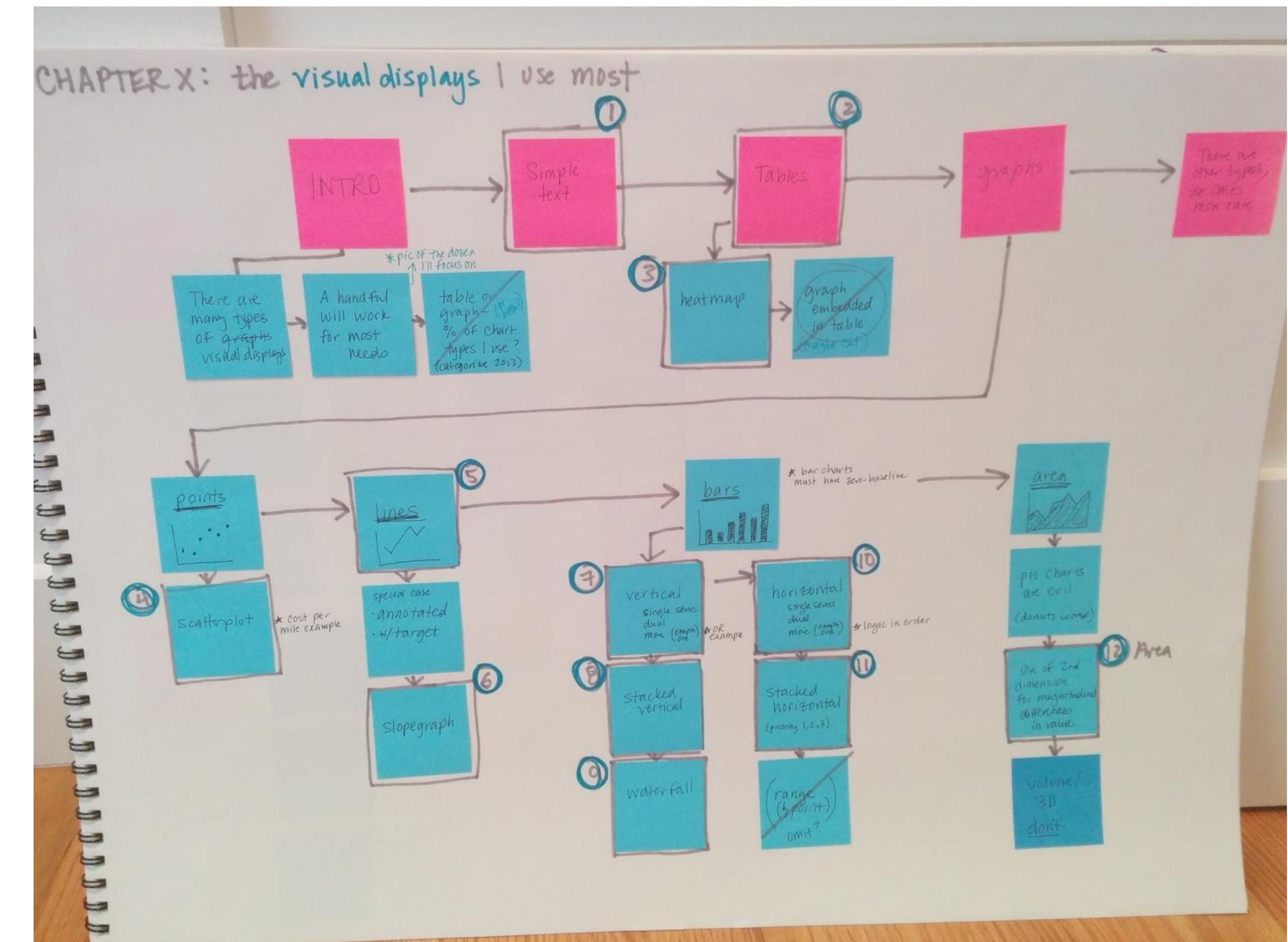
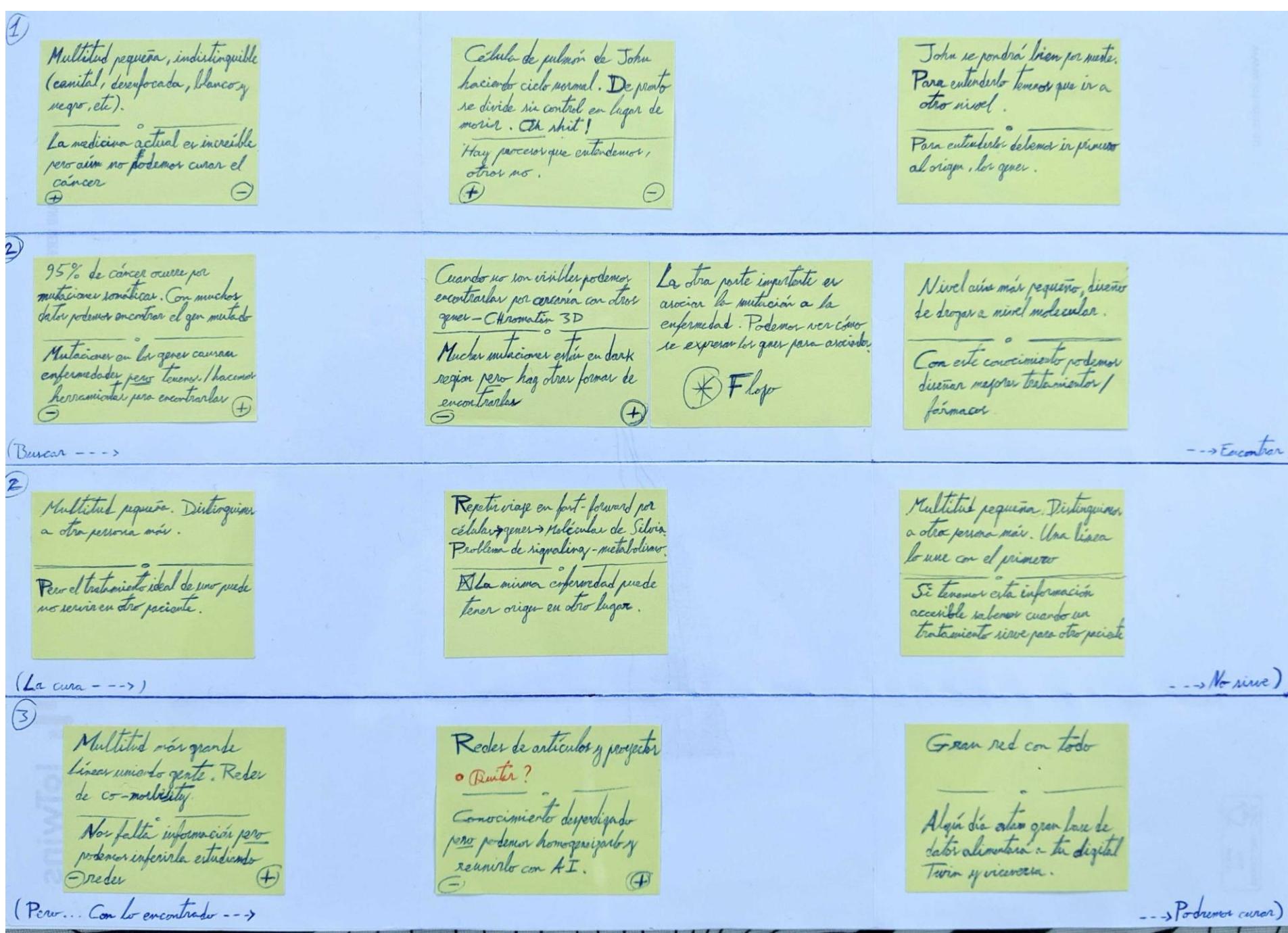
# Resumen

- Es necesario guiar a la audiencia
- La forma de hacerlo depende del contexto previo que tengan
- Hay varias estrategias para ayudar a la audiencia a navegar por una visualización:
  - **Anotación.** Texto y marcas que ayuden a interpretarla
  - **Narración.** Anotaciones conectadas en una secuencia lógica
  - **Historia.** Una narración que contenga drama/conflicto para obtener una respuesta emocional
- La audiencia puede tener o no un interés previo en el tema. Podemos crear interés utilizando técnicas de storytelling: conflicto, tensión, empatía, ...



# Primer paso de planificación: Storyboard

- Organizar ideas en secciones, subsecciones
- Cada parte está reducida a la mínima expresión (Una acción, una frase, ...)
- Storyboard permite ver el flujo de la historia... y cambiarlo
- Multinivel: Esquema de la historia que se puede desarrollar en subsecciones
- Herramientas similares para planificar cualquier tipo de narrativa (guión=board)



[www.storytellingwithdata.com](http://www.storytellingwithdata.com)

# Referencias

- Campbell, J. (2008). *The hero with a thousand faces*
- McKee, R. (2011). Story.
- Snyder, B. (2005). Save the cat.
- Vogler, C. (2007). The Writer's Journey: Mythic Structure for Writers.
- Rachael Stephen. Story circle aplicado <https://www.rachaelstephen.com/videolibrary/category/storyfix+episodes>
- **David JP Phillips** on science of storytelling para presentaciones <https://youtu.be/Nj-hdQMa3uA>  
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- Podcast Data Stories 035: Visual Storytelling. <https://datastori.es/podcast/data-stories-35-visual-storytelling-w-alberto-cairo-and-robert-kosara/>
- Segel, E., & Heer, J. (2010). Narrative visualization: Telling stories with data. *IEEE transactions on visualization and computer graphics*, 16(6), 1139-1148.
- Stolper, C. D., et al. (2016). Emerging and recurring data-driven storytelling techniques: Analysis of a curated collection of recent stories.
- Knafllic, C. N. (2015). **Storytelling with data**: A data visualization guide for business professionals. John Wiley & Sons. (capítulos 1 y 7)  
-----
- Tutorial de story en Tableau: [https://help.tableau.com/current/pro/desktop/en-us/story\\_example.htm](https://help.tableau.com/current/pro/desktop/en-us/story_example.htm)

# Práctica Tableau

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# Parte 1.1

## Dataset: any\_drinking.csv

- Cargar dataset
  - Datasource -> Text File
  - Formateo simple: Ordenar, describir, rename, esconder.
  - **ESCONDER COLUMNAS EXCEPTO LAS DE 2012**
  - Campos calculados: Crear campo Diff\_2012 (Male -Female).
- Hacer una tabla de Both\_Sexes\_2012 por estado
  - Measures (verde, cuantitativos) y Dimensions (azul, categóricos)
  - Arrastrar State a Rows y Diff\_2012 a Marks/Text. Cambiar la forma de agregar a Average (AVG) (por defecto: SUM). Filter out National.
- Barchart simple de Difference por State
  - New sheet. Arrastrar State y Diff 2012 a Rows y Columns.
  - Swap columns/bars, sort, edit axis // Ajustar color, size, tooltip

state_table	
State	F
Texas	19.085
South Carolina	18.664
West Virginia	18.546
Louisiana	18.326
Arkansas	18.284
Kansas	18.196
Nebraska	18.191
Mississippi	17.873
Alabama	17.532
Oklahoma	17.346
Missouri	17.314
North Dakota	17.272
Hawaii	16.840
Iowa	16.809
North Carolina	16.653
South Dakota	16.600
Indiana	16.408
Virginia	16.245
Kentucky	16.094
Georgia	15.996
Pennsylvania	15.884
Ohio	15.570
New Mexico	15.538
Tennessee	14.986
Nevada	14.178
Illinois	14.075
Minnesota	14.060
Wyoming	14.038
Florida	13.941
District Of Columbia	13.800

## Parte 1.2

### Dataset: any\_drinking.csv

- Boxplot
  - New sheet. Arrastrar State y Diff 2012. // Uncheck Analysis/Aggregate Measures
  - Marks: circles. Ajustar tamaño, color y borde // Arrastrar Location a Tooltip
  - Right-click en eje Y: Add reference Line/ Boxplot
- Histograma
  - Crear **bin** en Data Source -> New Sheet -> Crear gráfica con Diff2012 y el nuevo bin (Probar Bin values)
  - ¿Qué agregación debería tener Diff\_2012?
- Barchart Diff\_2012 - Location
  - Barchart por defecto agrega Counties con el mismo nombre
  - Filtrar por estado sin crear nuevo campo: En: Work Sheet/Data pane/Create/Combined field, seleccionando Location y State
  - Usar campo combinado en Rows

## Parte 1.3

Dataset: any\_drinking.csv

- Mapa de Símbolos proporcionales
  - Mapa por estado. Seleccionar State, ir a Show me/map
  - (5') Graficar un atributo Measure (cualquiera) con círculos. Tamaño y color controlados por el attr
  - Doble click en las escalas para modificar rangos
- Mapa por Location
  - Cambiar Geographic Role de Location a “County” antes de hacer el mapa.
  - (5') Graficar dos attr. tipo Measure (uno en color y otro en tamaño) sobre mapa como círculos
- Variación: Coropleto. Crear map, añadir Location y State a Detail. Attr. Cuantitativo en el color.