

MUSIC

Popularity effects

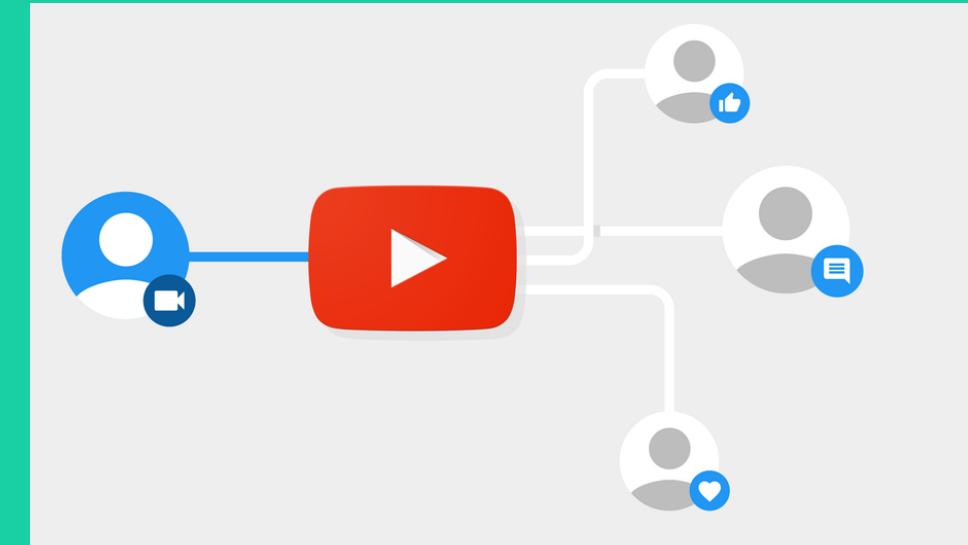
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Project Group 41

Data collection

1. Youtube



vevo



2. Spotify

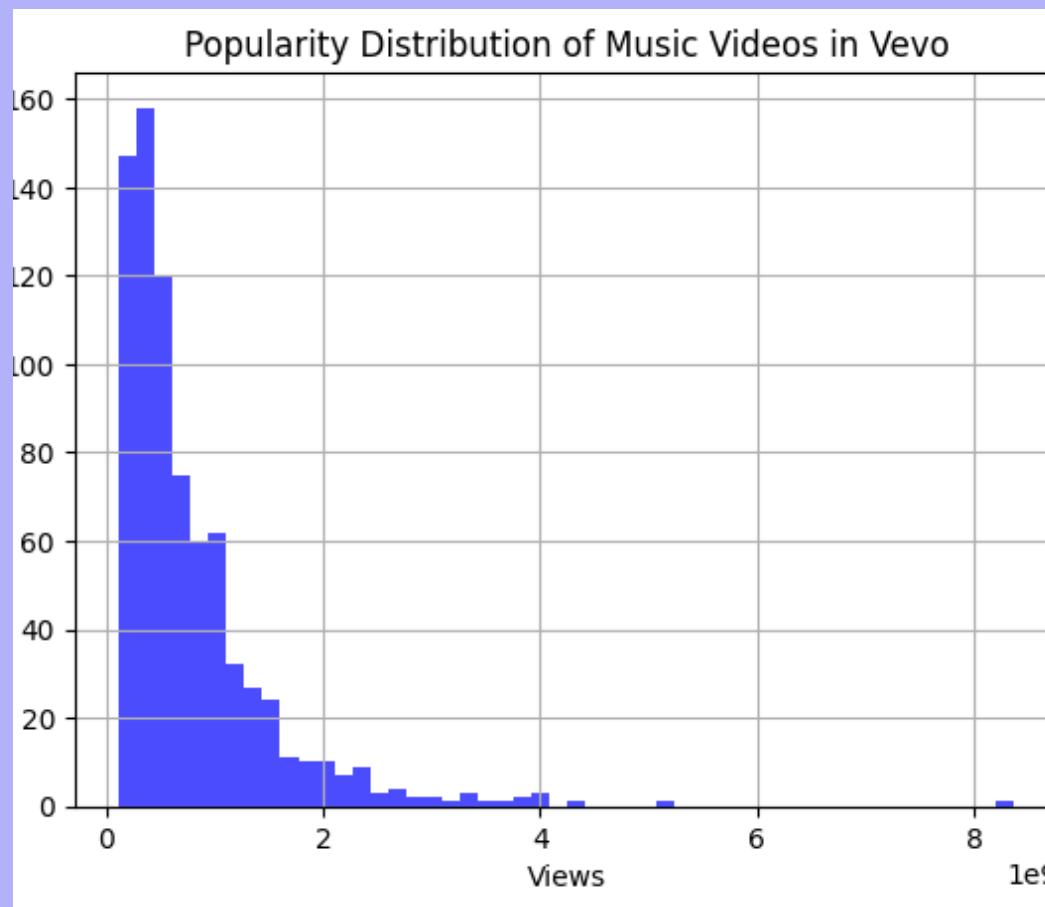


3rd party source

- Songs selected were the songs from 2010-2017 that are in the top 2000 most streamed songs ever

- Songs selected were the current 777 VEVO music videos with most views inside a Official youtube playlist

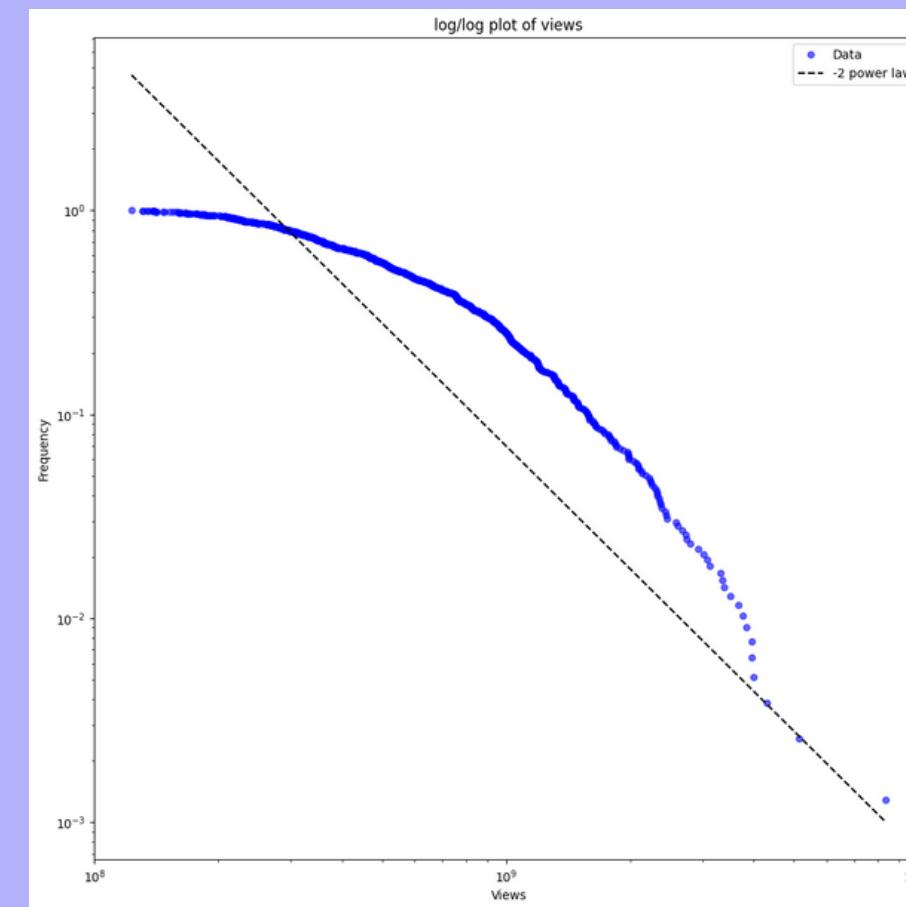
Youtube Distribution VEVO



Linear plot of stream distribution

LLR : $R = 0.14$, $p > 0.05$

Akaike information criterion:
Power-law AIC: 34023.39
Exponential AIC: 33126.58



Loglog plot of stream distribution

Powerlaw

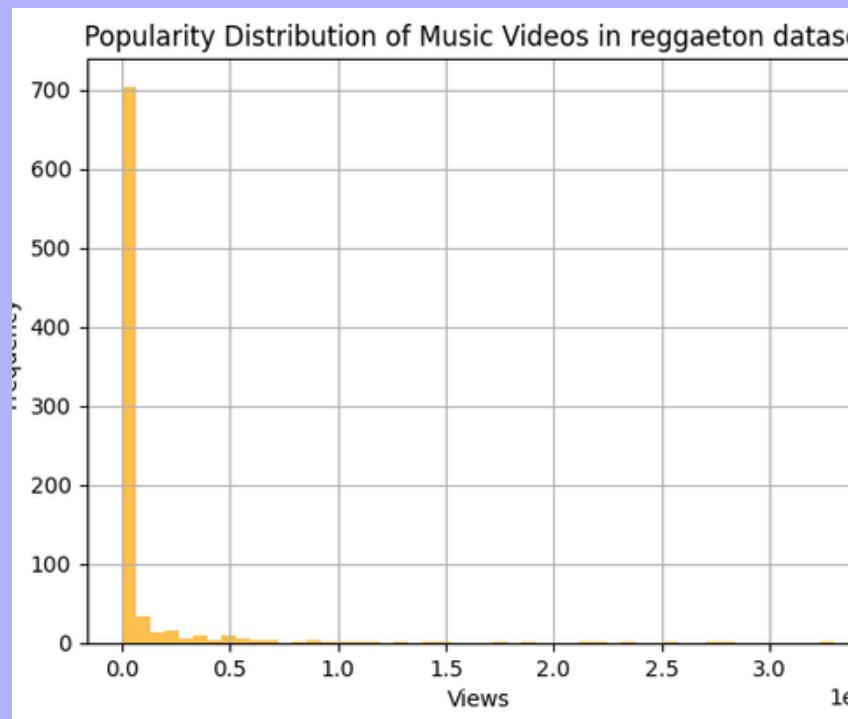


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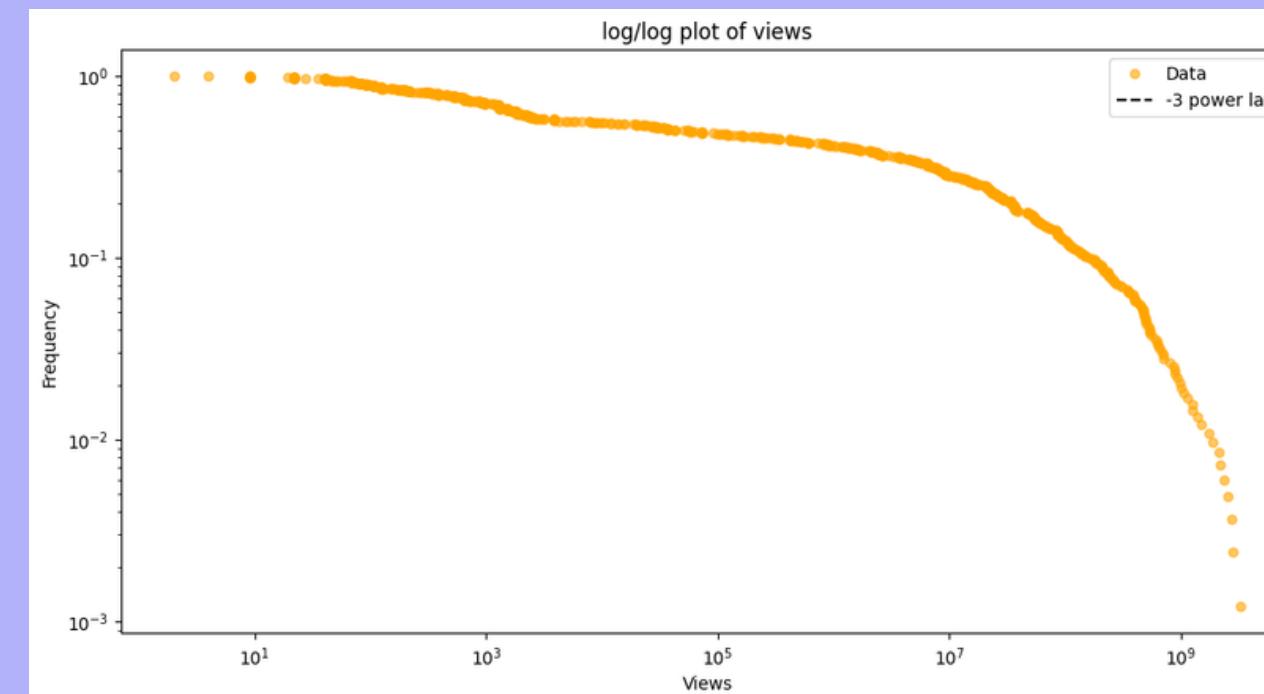
Exponential



Youtube Distribution *Reggaeton*



Linear plot of stream distribution



Loglog plot of stream distribution

 **LLR** : $R = 0.37$, $p > 0.05$

 **Akaike information criterion:**
Power-law AIC: 23197.97
Exponential AIC: 31813.62

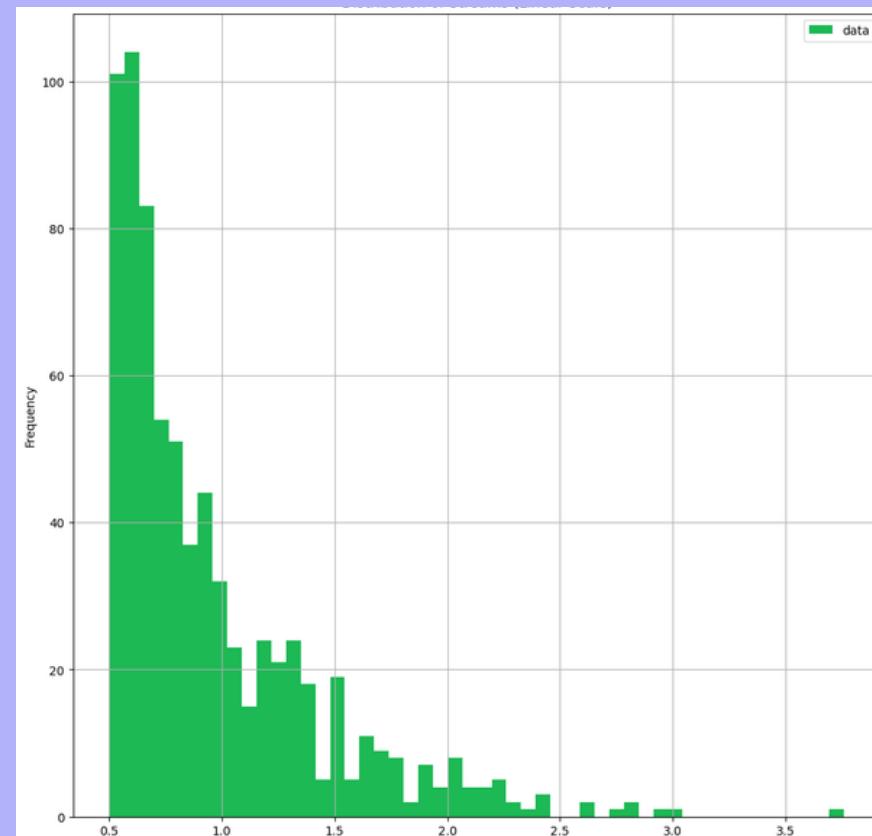
Powerlaw



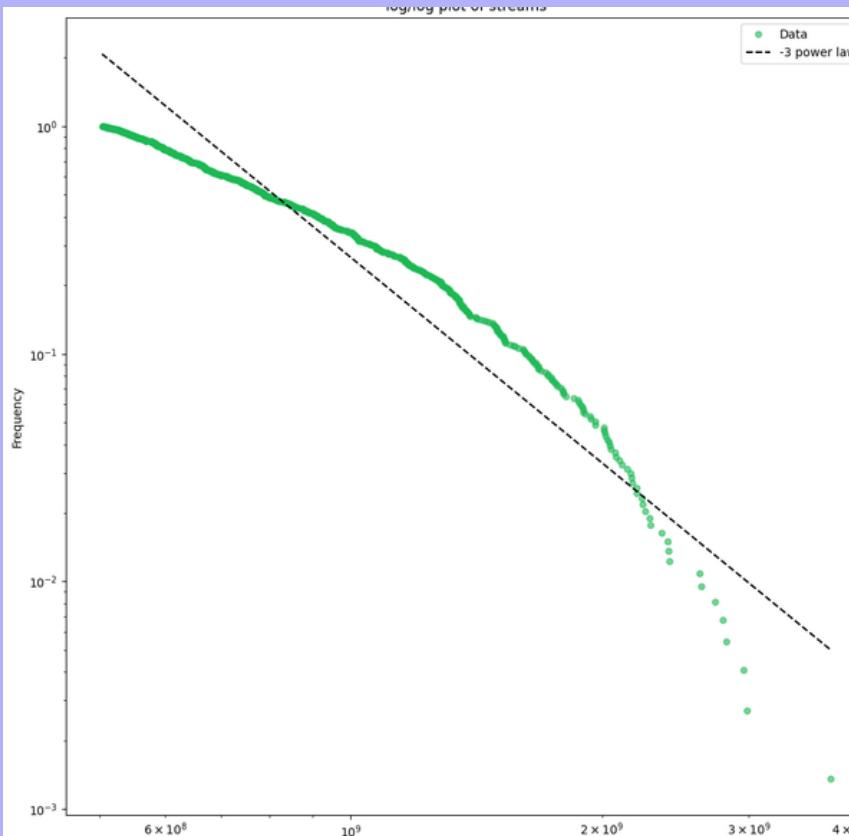
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Exponential

Spotify Distribution



Linear plot of stream distribution

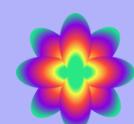


Loglog plot of stream distribution

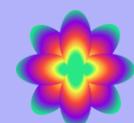
Powerlaw

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Exponential



LLR : $R = -4.002$, $p < 0.05$



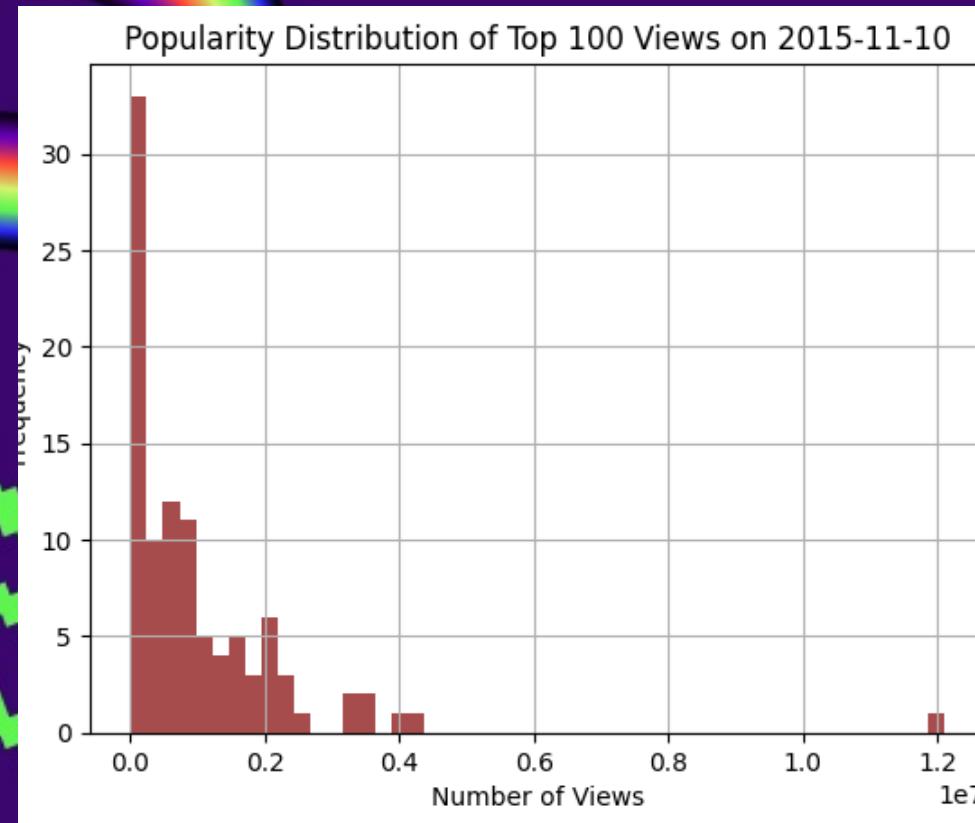
Akaike information criterion:
Power-law AIC: 31291.46
Exponential AIC: 30826.96



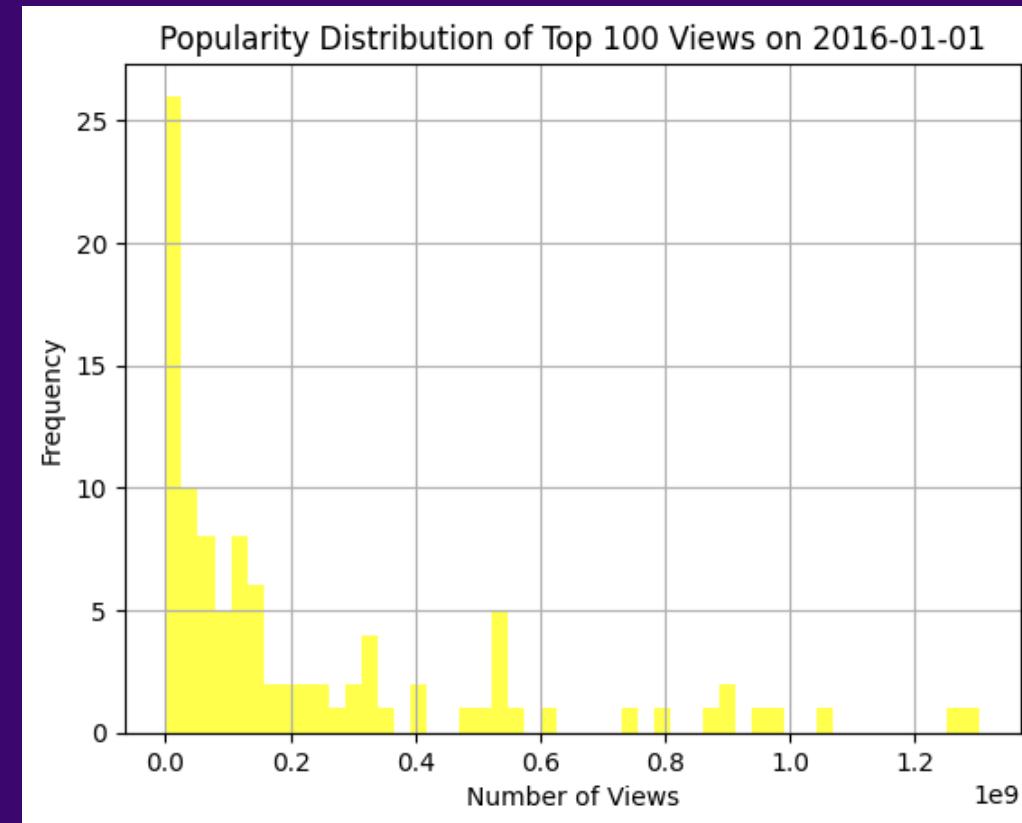
Comparing YT Daily Views*

*using the class provided dataset

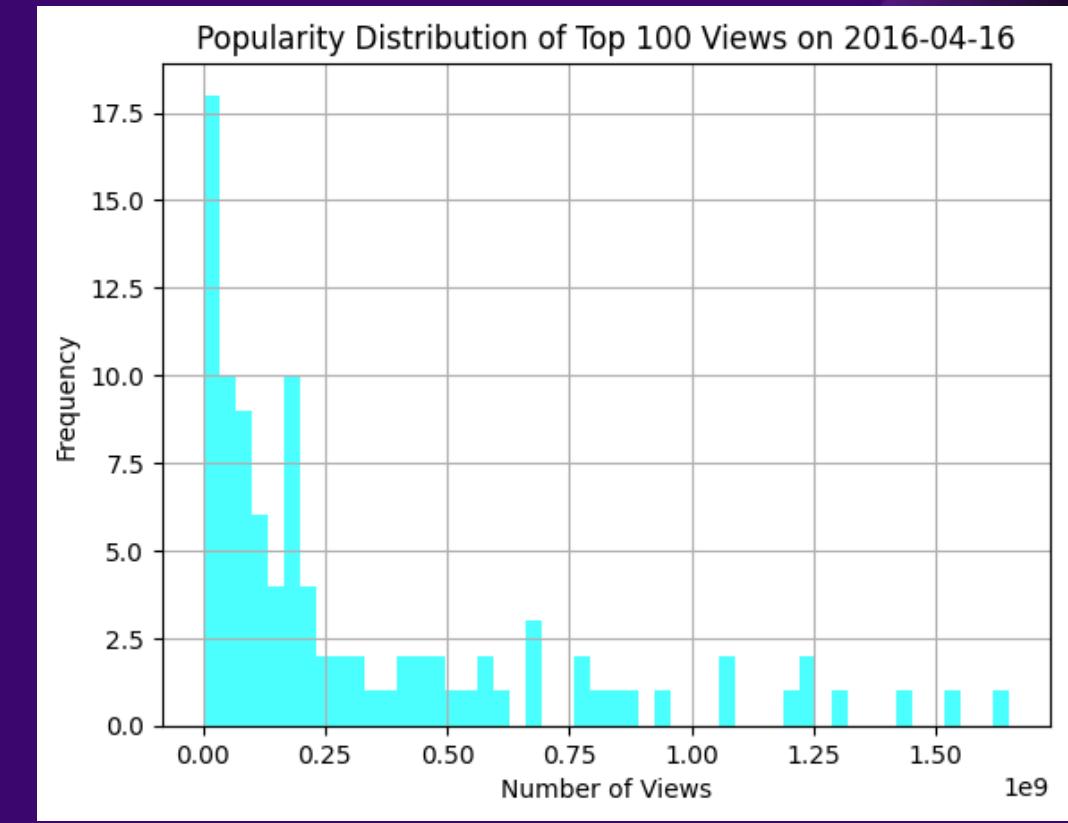
10/11/2015



01/01/2016



16/04/2016



Inconclusive distribution

LLR: positive R p>0.05

AIC: power law 2979 >
exponential 2974

Inconclusive distribution

LLR: -R, p>0.05

AIC: power law 3982 <
exponential 4054

Inconclusive distribution

LLR: -R, p>0.05

AIC: power law 3985 <
exponential 4043

Comparing YT Daily Views

Total

Power laws are often observed when analyzing cumulative data over time because a few videos accumulate a disproportionately large number of views. These few highly popular videos skew the distribution, resulting in a long tail.

Daily

Daily views may be **exponential** as they are more influenced by short-term factors like marketing, trends, or social media sharing. Each day, different videos may capture viewer attention, leading to fluctuations in daily views that don't necessarily conform to a power law distribution.

Assumptions of the analysis

- I. Users stream music according not only to their taste but by **a combination of factors**; and **the frequency at which individuals use the site is not relevant.**
- II. The views in the next day are proportional to the number of views up to the day before, resulting in exponential growth **for only certain cases with an initial push.**

