Covid 19 crisis as a model for Data literacy

Covid 19 Timeline - Statistical Work

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In [2]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
```

In [3]:
```
cases=pd.read_csv('WHO-COVID-19-global-data.csv')
```

INDIA

In [4]:
```
indi_cd=cases[(cases['Country']=='India')]
indi_cd=indi_cd[['Country','Date_reported','New_cases','New_deaths']]
```

In [5]:
```
indi_cd=indi_cd.reset_index()
indi_cd
```

Out[5]:

	index	Country	Date_reported	New_cases	New_deaths
0	81888	India	2020-01-03	0	0
1	81889	India	2020-01-04	0	0
2	81890	India	2020-01-05	0	0
3	81891	India	2020-01-06	0	0
4	81892	India	2020-01-07	0	0
...	...	...	...	...	...
848	82736	India	2022-04-30	3688	50
849	82737	India	2022-05-01	3324	40
850	82738	India	2022-05-02	3157	26
851	82739	India	2022-05-03	2568	20
852	82740	India	2022-05-04	3205	31

853 rows × 5 columns

In [6]:
```
indi_2021=indi_cd[(indi_cd['Date_reported']=='2021-01-01')]
indi_2021
```

Out[6]:

	index	Country	Date_reported	New_cases	New_deaths
364	82252	India	2021-01-01	20035	256

In [7]:
```
indi_2022=indi_cd[(indi_cd['Date_reported']=='2022-01-01')]
indi_2022
```

Out[7]:

	index	Country	Date_reported	New_cases	New_deaths
729	82617	India	2022-01-01	22775	406

In [8]:
```
indi20_keydates=['2020-03-24', '2020-04-15', '2020-05-04', '2020-05-18']
indi21_keydates=['2021-04-05']
```

2020

In [10]:
```
indi_2020= indi_cd[:364]
indi_2020
```

Out[10]:

	index	Country	Date_reported	New_cases	New_deaths
0	81888	India	2020-01-03	0	0
1	81889	India	2020-01-04	0	0
2	81890	India	2020-01-05	0	0
3	81891	India	2020-01-06	0	0
4	81892	India	2020-01-07	0	0
...	...	...	...	...	...
359	82247	India	2020-12-27	18732	279
360	82248	India	2020-12-28	20021	279
361	82249	India	2020-12-29	16432	252
362	82250	India	2020-12-30	20549	286
363	82251	India	2020-12-31	21822	299

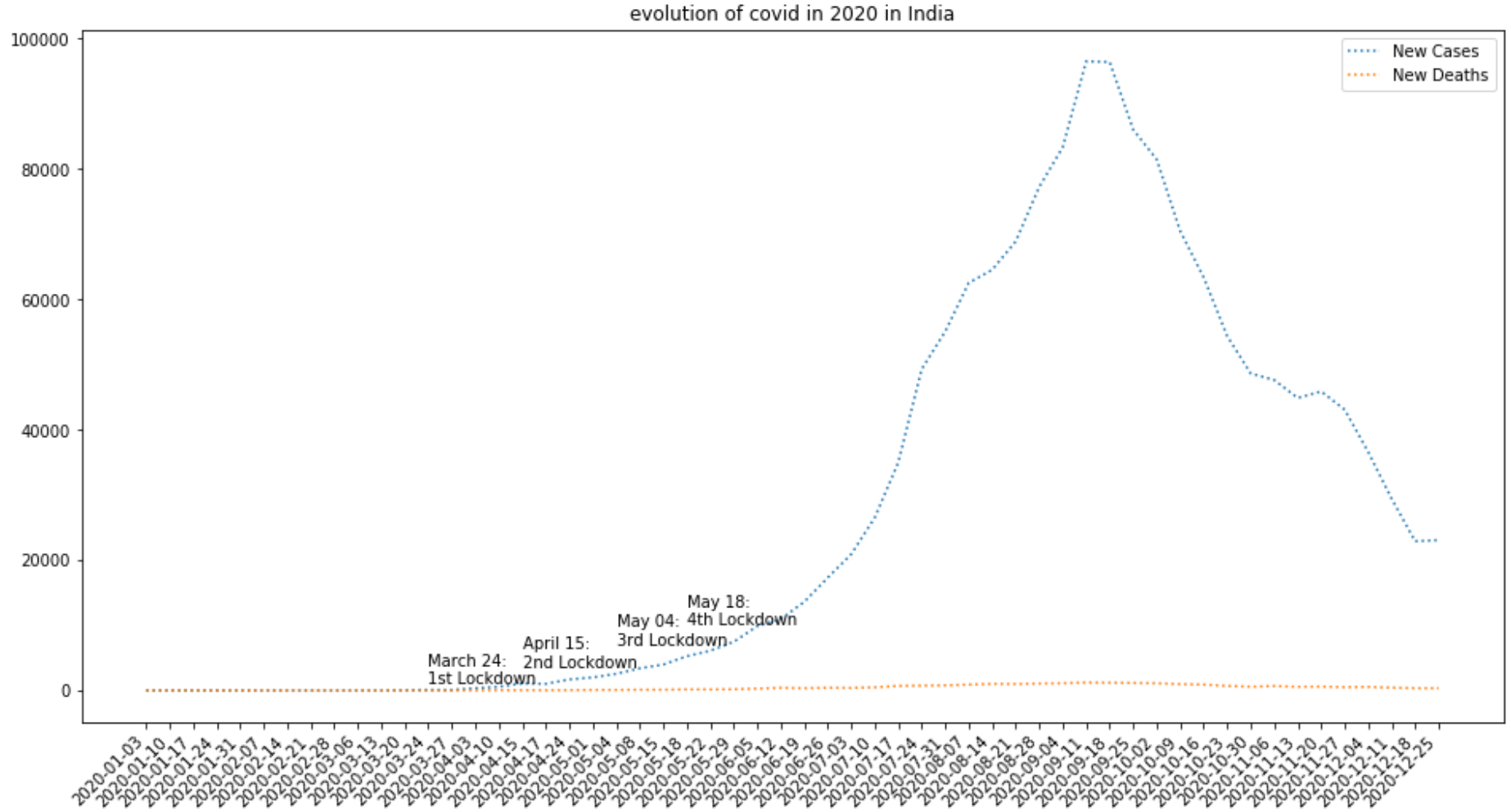
364 rows × 5 columns

In [12]:
```
dates_2020=indi_2020['Date_reported']
indi_dates_2020=[dates_2020[i] for i in range(364) if i%7==0 or dates_2020[i] in indi20_keydates]
```

In [13]:
```
cases_2020=indi_2020['New_cases']
indi_cases_2020=[cases_2020[i] for i in range(364) if dates_2020[i] in indi_dates_2020]
```

In [14]:
```
deaths_2020=indi_2020['New_deaths']
indi_deaths_2020=[deaths_2020[i] for i in range(364) if dates_2020[i] in indi_dates_2020]
```

In [22]:
```
plt.figure(figsize=[16,8])
plt.title('evolution of covid in 2020 in India')
plt.plot(indi_dates_2020,indi_cases_2020,label="New Cases",linestyle='dotted');
plt.xticks(rotation=45,ha='right');
plt.plot(indi_dates_2020,indi_deaths_2020,label="New Deaths",linestyle='dotted');
plt.xticks(rotation=45,ha='right');
plt.annotate("March 24:\n1st Lockdown",('2020-03-24',1000));
plt.annotate("April 15:\n2nd Lockdown",('2020-04-15',3500));
plt.annotate("May 04:\n3rd Lockdown",('2020-05-04',7000));
plt.annotate("May 18:\n4th Lockdown",('2020-05-18',10000));
plt.legend();
plt.savefig("indi2020.png",dpi=300);
plt.show();
```


evolution of covid in 2020 in India
New Cases
New Deaths
March 24:
1st Lockdown
April 15:
2nd Lockdown
May 04:
3rd Lockdown
May 18:
4th Lockdown

2021

In [25]:
```
indi2021=indi_cd[364:729]
indi2021
```

Out[25]:

	index	Country	Date_reported	New_cases	New_deaths
364	82252	India	2021-01-01	20035	256
365	82253	India	2021-01-02	19079	224
366	82254	India	2021-01-03	18177	217
367	82255	India	2021-01-04	16504	214
368	82256	India	2021-01-05	16375	201
...	...	...	...	...	...
724	82612	India	2021-12-27	6531	315
725	82613	India	2021-12-28	6358	293
726	82614	India	2021-12-29	9195	302
727	82615	India	2021-12-30	13154	268
728	82616	India	2021-12-31	16764	220

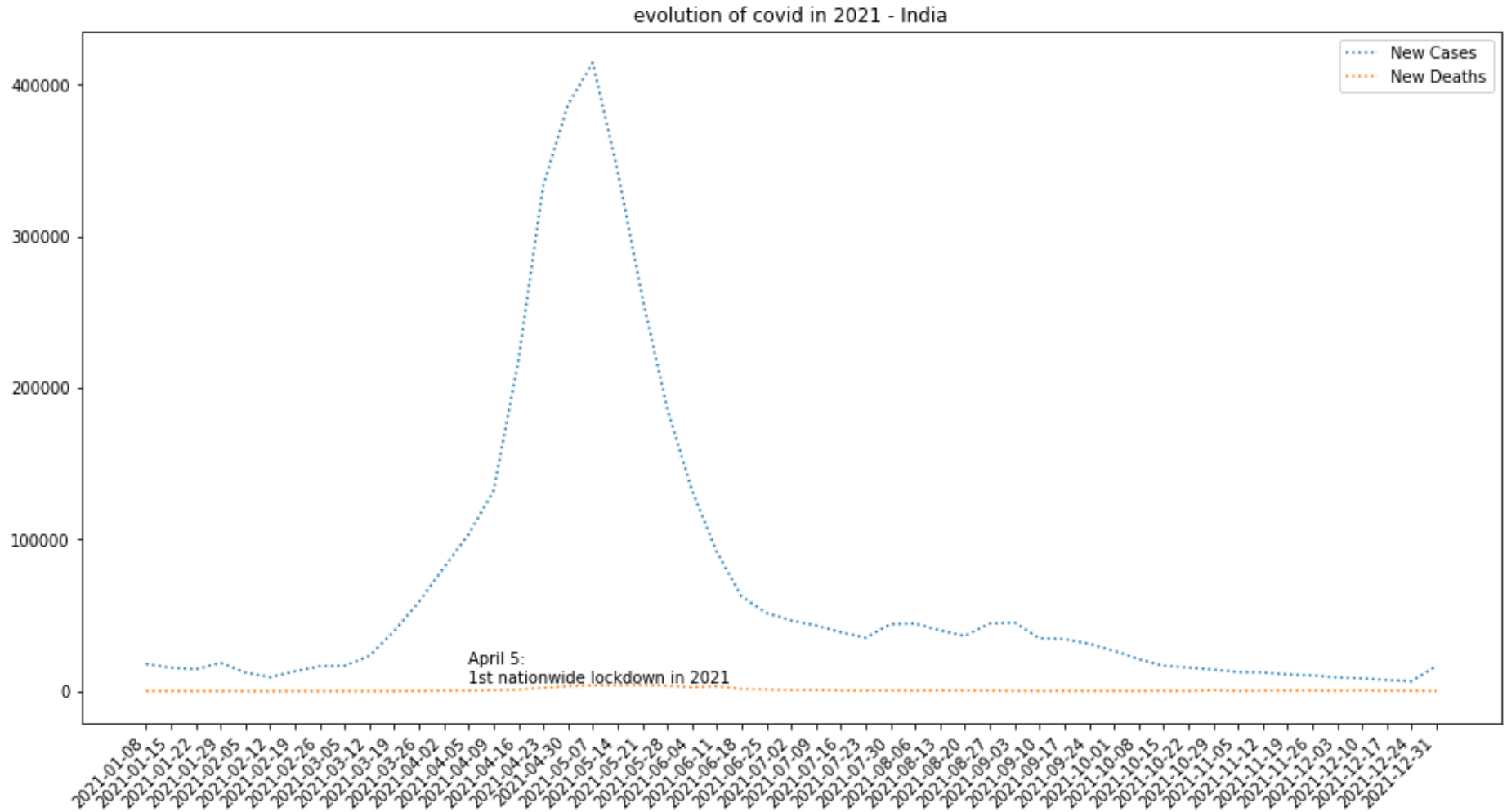
365 rows × 5 columns

In [29]:
```
dates_2021=indi2021['Date_reported']
indi_dates_2021=[dates_2021[i] for i in range(365,729) if i%7==0 or dates_2021[i] in indi21_keydates]
```

In [30]:
```
cases_2021=indi2021['New_cases']
indi_cases_2021=[cases_2021[i] for i in range(365,729) if dates_2021[i] in indi_dates_2021]
```

In [31]:
```
deaths_2021=indi2021['New_deaths']
indi_deaths_2021=[deaths_2021[i] for i in range(365,729) if dates_2021[i] in indi_dates_2021]
```

In [33]:
```
plt.figure(figsize=[16,8])
plt.title('evolution of covid in 2021 - India')
plt.plot(indi_dates_2021,indi_cases_2021,label="New Cases",linestyle='dotted');
plt.xticks(rotation=45,ha='right');
plt.plot(indi_dates_2021,indi_deaths_2021,label="New Deaths",linestyle='dotted');
plt.xticks(rotation=45,ha='right');
plt.annotate("April 5:\n1st nationwide lockdown in 2021",('2021-04-05',6000));
plt.legend();
plt.savefig("indi2021.png",dpi=300);
plt.show();
```



2022

In [34]:
```
indi2022=indi_cd[729:]
indi2022
```

Out[34]:

	index	Country	Date_reported	New_cases	New_deaths
729	82617	India	2022-01-01	22775	406
730	82618	India	2022-01-02	27553	284
731	82619	India	2022-01-03	33750	123
732	82620	India	2022-01-04	37379	124
733	82621	India	2022-01-05	58097	534
...	...	...	...	...	...
848	82736	India	2022-04-30	3688	50
849	82737	India	2022-05-01	3324	40
850	82738	India	2022-05-02	3157	26
851	82739	India	2022-05-03	2568	20
852	82740	India	2022-05-04	3205	31

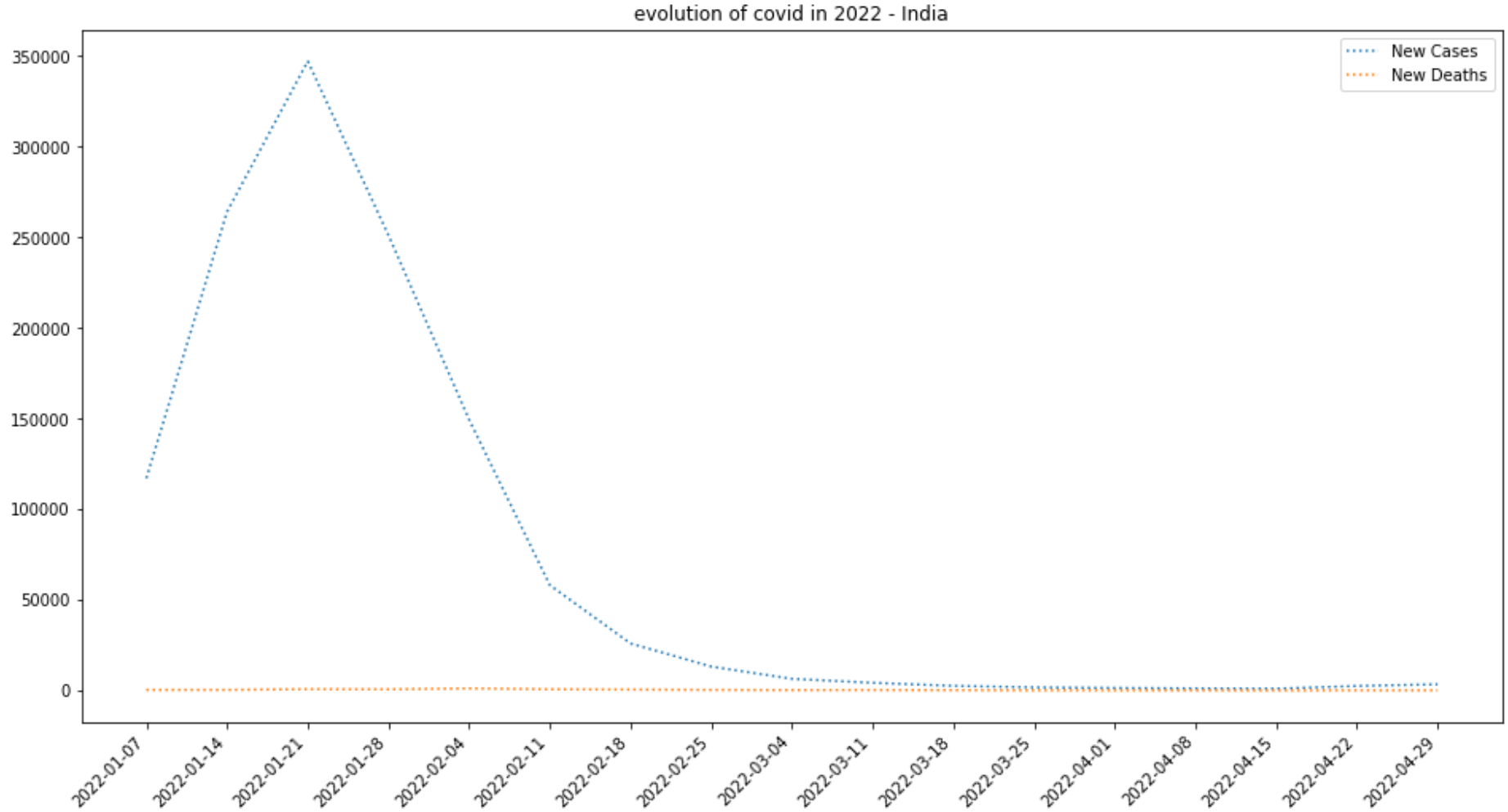
124 rows × 5 columns

In [35]:
```
dates_2022=indi2022['Date_reported']
indi_dates_2022=[dates_2022[i] for i in range(729,852) if i%7==0]
```

In [36]:
```
cases_2022=indi2022['New_cases']
indi_cases_2022=[cases_2022[i] for i in range(729,852) if dates_2022[i] in indi_dates_2022]
```

In [37]:
```
deaths_2022=indi2022['New_deaths']
indi_deaths_2022=[deaths_2022[i] for i in range(729,852) if dates_2022[i] in indi_dates_2022]
```

In [38]:
```
plt.figure(figsize=[16,8])
plt.title('evolution of covid in 2022 - India')
plt.plot(indi_dates_2022,indi_cases_2022,label="New Cases",linestyle='dotted');
plt.xticks(rotation=45,ha='right');
plt.plot(indi_dates_2022,indi_deaths_2022,label="New Deaths",linestyle='dotted');
plt.xticks(rotation=45,ha='right');
plt.legend();
plt.savefig("indi2022.png",dpi=300);
plt.show();
```



In [ ]: