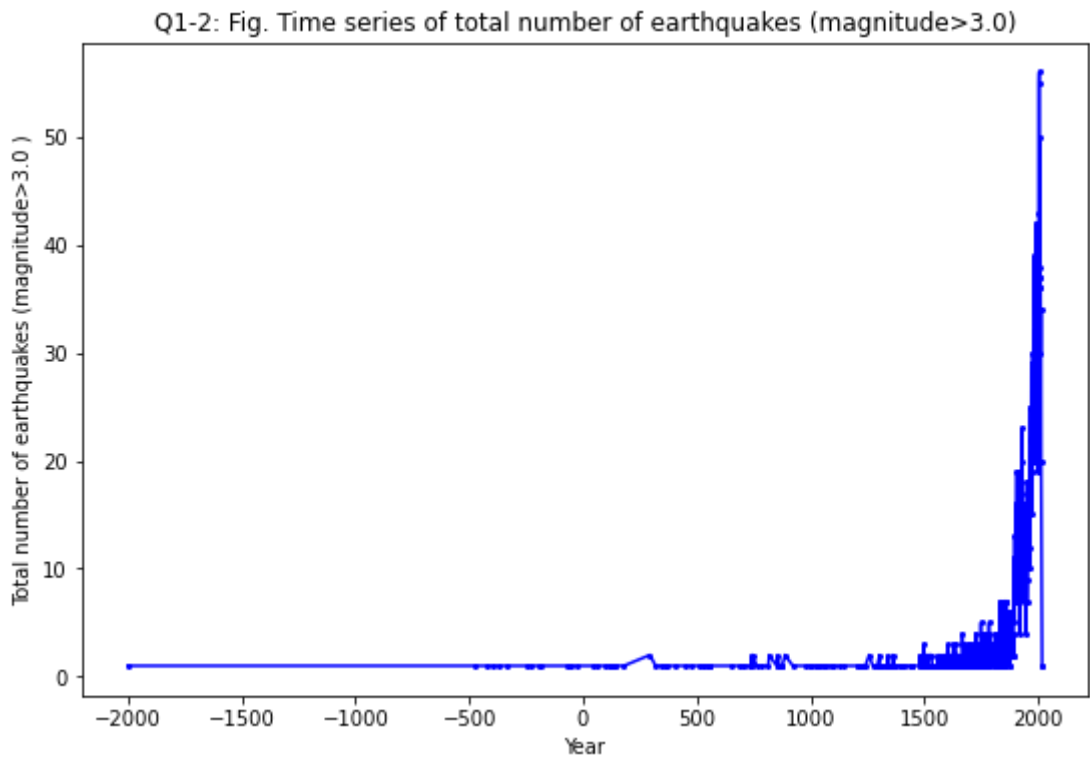


In [1]:

Q1-1: The top 20 countries along with the total number of deaths:

Country	
CHINA	2075019.0
TURKEY	1134569.0
IRAN	1011446.0
ITALY	498477.0
SYRIA	439224.0
HAITI	323474.0
AZERBAIJAN	317219.0
JAPAN	278142.0
ARMENIA	191890.0
PAKISTAN	145083.0
IRAQ	136200.0
ECUADOR	135479.0
TURKMENISTAN	117412.0
PERU	102219.0
ISRAEL	90388.0
PORTUGAL	83531.0
GREECE	79174.0
CHILE	64276.0
INDIA	63491.0
TAIWAN	57135.0
Name: Deaths, dtype: float64	



It seems the frequency of earthquake increasing with time, but it may be caused by lacking of record in the past or geologically active periods alternate with geological intermittent periods.

Q1-3(1): Total number of earthquakes since 2150 B.C. in a given country:

Country	
AFGHANISTAN	62
ALBANIA	56
ALGERIA	57
ANTARCTICA	5
ANTIGUA AND BARBUDA	3
..	

VENEZUELA	66
VIETNAM	5
WALLIS AND FUTUNA (FRENCH TERRITORY)	1
YEMEN	10
ZAMBIA	1

Name: Year, Length: 156, dtype: int64

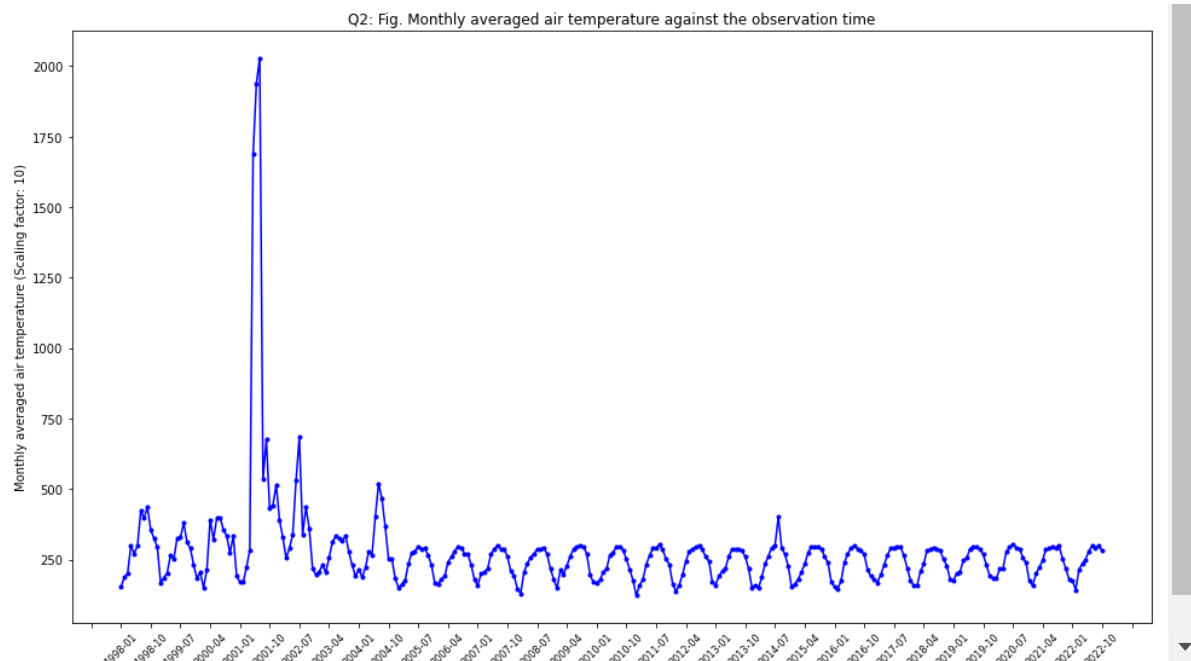
Q1-3(2): Date and location of the largest earthquake ever happened in every country  
(Descending)

		Ms	Year	Mo	Dy	Hr	Mn	Sec	\
Country									
USA	3746	9.1	1957.0	3.0	9.0	14.0	22.0	31.9	
INDONESIA	5327	8.8	2004.0	12.0	26.0	0.0	58.0	53.4	
CHILE	1169	8.7	1730.0	7.0	8.0	8.0	45.0	NaN	
MONGOLIA	2615	8.7	1905.0	7.0	23.0	2.0	46.0	12.0	
INDIA	2458	8.7	1897.0	6.0	12.0	11.0	6.0	NaN	
...		...	...	...	...	...	...	...	
NETHERLANDS	4824	5.2	1992.0	4.0	13.0	1.0	20.0	0.8	
SUDAN	4861	5.1	1993.0	8.0	1.0	0.0	20.0	40.5	
RWANDA	5528	4.9	2008.0	2.0	14.0	2.0	7.0	46.7	
BRAZIL	4624	4.8	1986.0	11.0	30.0	5.0	19.0	48.2	
POLAND	6200	3.1	2019.0	7.0	1.0	12.0	12.0	6.8	

			Location Name	Latitude	\
Country					
USA	3746		ALASKA	51.292	
INDONESIA	5327	INDONESIA: SUMATRA: ACEH: OFF WEST COAST		3.316	
CHILE	1169		CHILE: VALPARAISO	-32.500	
MONGOLIA	2615		MONGOLIA	49.000	
INDIA	2458		INDIA: ASSAM; BANGLADESH	26.000	
...			...	...	
NETHERLANDS	4824	THE NETHERLANDS: ROERMOND; GERMANY: BONN, HEIN...		51.153	
SUDAN	4861		SUDAN: KHARTOUM	15.385	
RWANDA	5528		RWANDA: GISENYI	-2.404	
BRAZIL	4624	BRAZIL: JOAO CAMARA, NATAL		-5.494	
POLAND	6200		POLAND: KATOWICE	50.287	

		Longitude
Country		
USA	3746	-175.629
INDONESIA	5327	95.854
CHILE	1169	-71.500
MONGOLIA	2615	98.000
INDIA	2458	91.000
...		...
NETHERLANDS	4824	5.798
SUDAN	4861	31.690
RWANDA	5528	28.918
BRAZIL	4624	-35.769
POLAND	6200	18.997

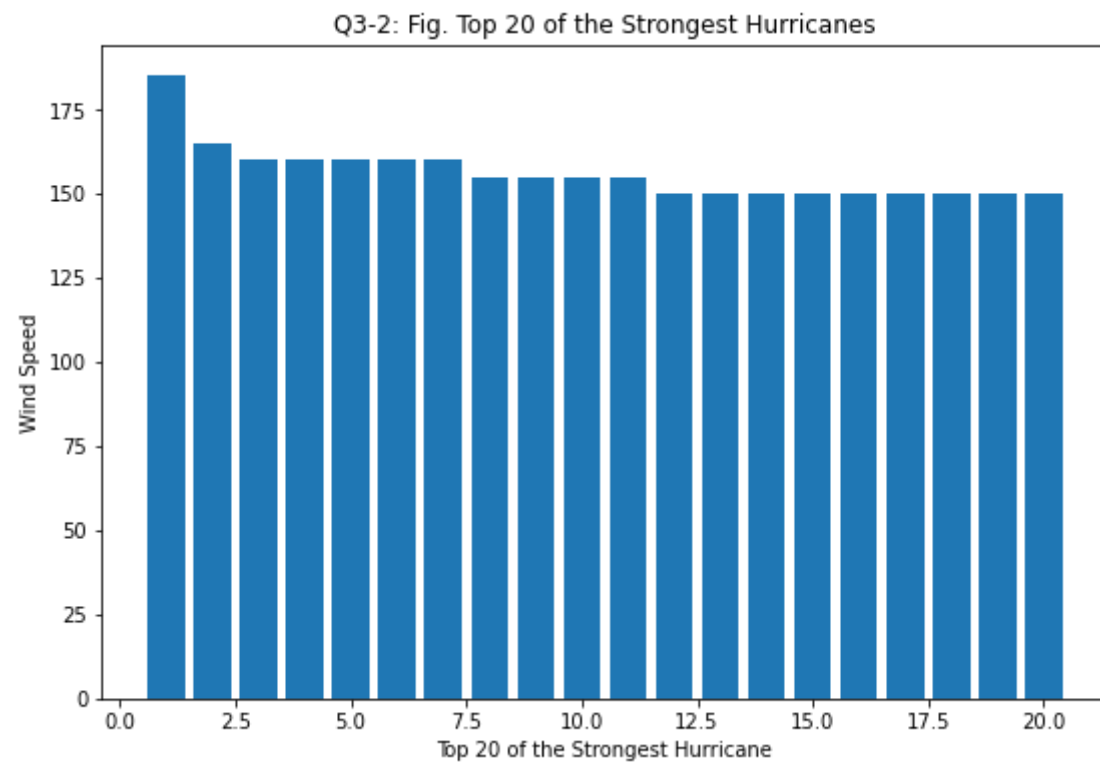
[152 rows x 10 columns]



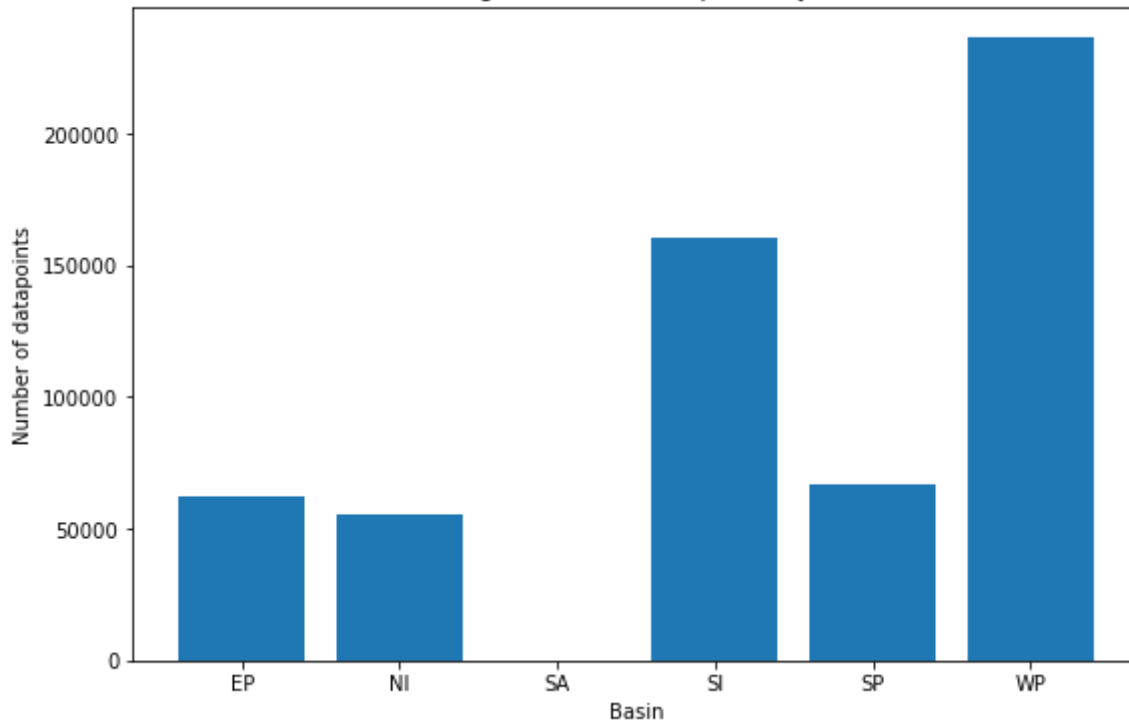
Excluding outliers, the average temperature shows a cyclical trend.

Q3-1: Names (NAME) of the 10 largest hurricanes according to wind speed (WMO\_WIND):

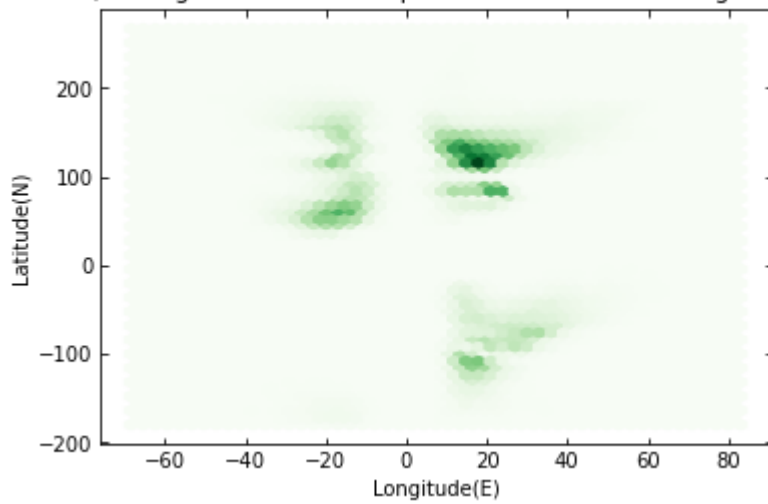
	SID	NAME	WMO_WIND
665954	2015293N13266	PATRICIA	185.0
427636	1980214N11330	ALLEN	165.0
178209	1935241N23291	NaN	160.0
552459	1997253N12255	LINDA	160.0
605746	2005289N18282	WILMA	160.0
482074	1988253N12306	GILBERT	160.0
689333	2019236N10314	DORIAN	160.0
604981	2005261N21290	RITA	155.0
560439	1998295N12284	MITCH	155.0
629194	2009288N07267	RICK	155.0



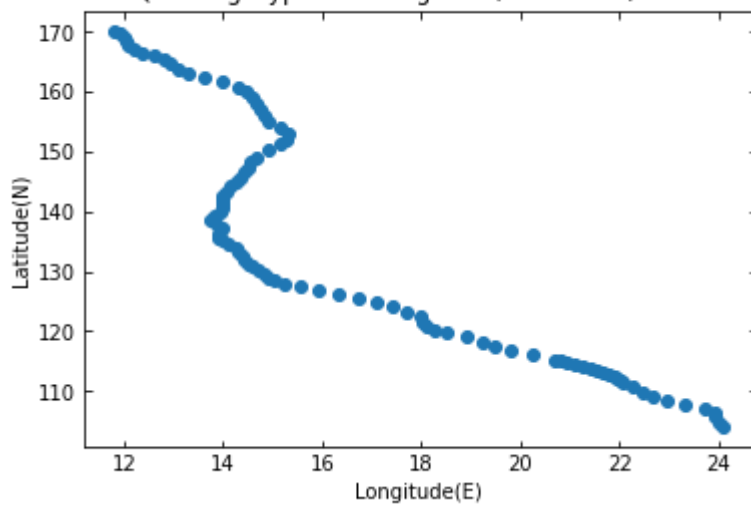
Q3-3: Fig. Number of datapoints by Basin

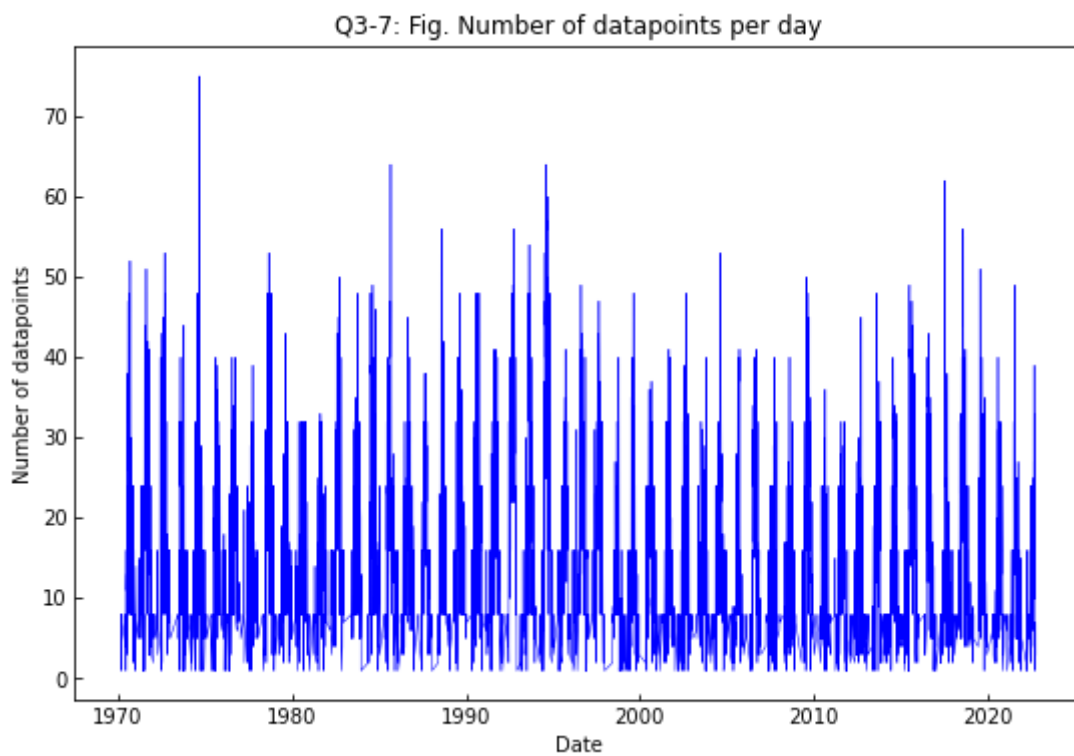


Q3-4: Fig. Location of datapoints in Latitude and Longitude



Q3-4: Fig. Typhoon Mangkhut (from 2018) track





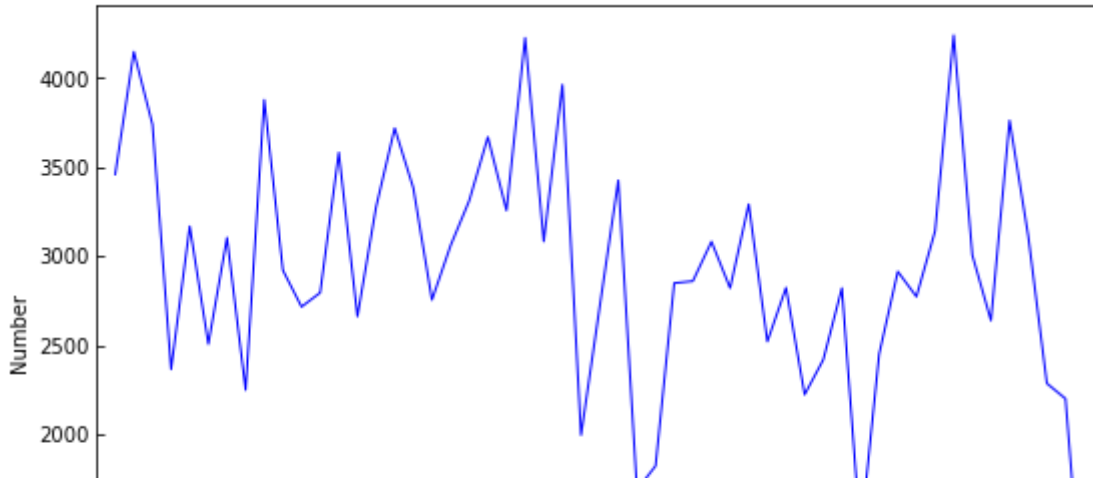
Q3-8: Sequential day number starting with day 1 on January 1st

```
350393    49
350394    49
350395    49
350396    49
350397    49
```

```
...
707084    282
707085    282
707173    284
707174    284
707175    284
```

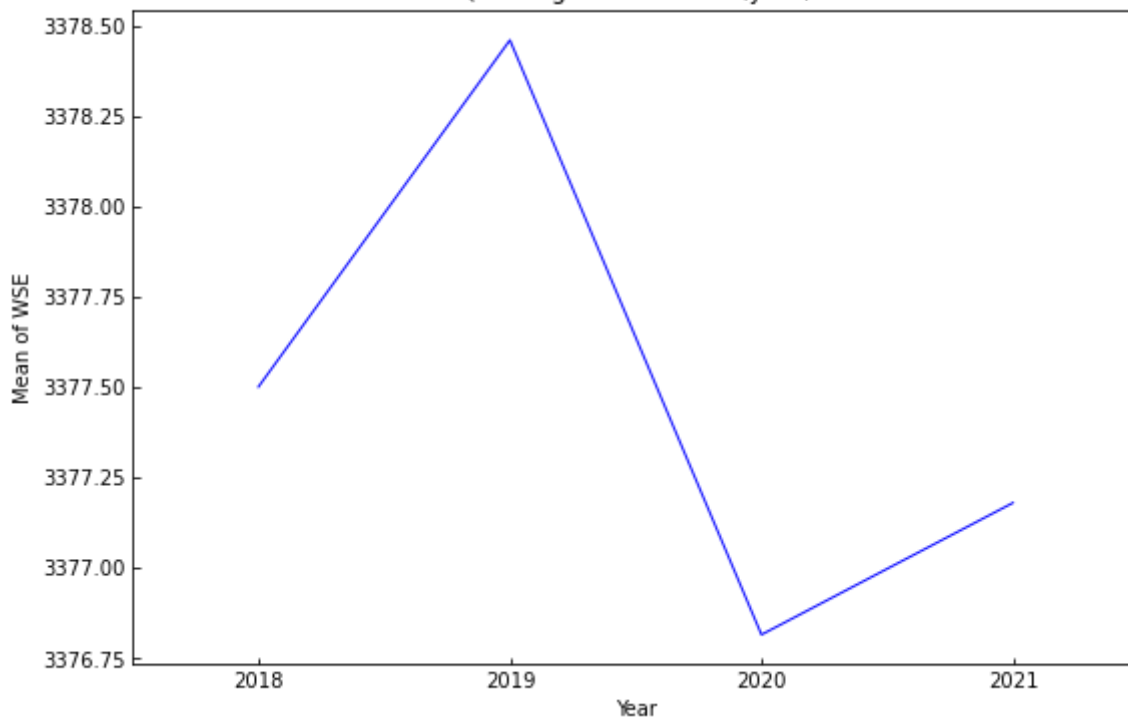
Name: ISO\_TIME, Length: 176352, dtype: int64

Q3-10: Fig. Number of hurricane(year)



As the figure shows, year of 1971, 1978, 1992, 1994, 2015 stand out as having anomalous hurricane activity

Q4-2: Fig. Mean of WSE(year)



	WSE	SRTM
mean	3377.548713	3412.744602
amax	3387.136719	3425.600098
median	3376.307190	3409.020019
var	20.667490	23.115362
std	4.546151	4.807844

After add the geoid to WSE values, precision of ICESat2 is better than SRTM and mean of water level is increasing by year.