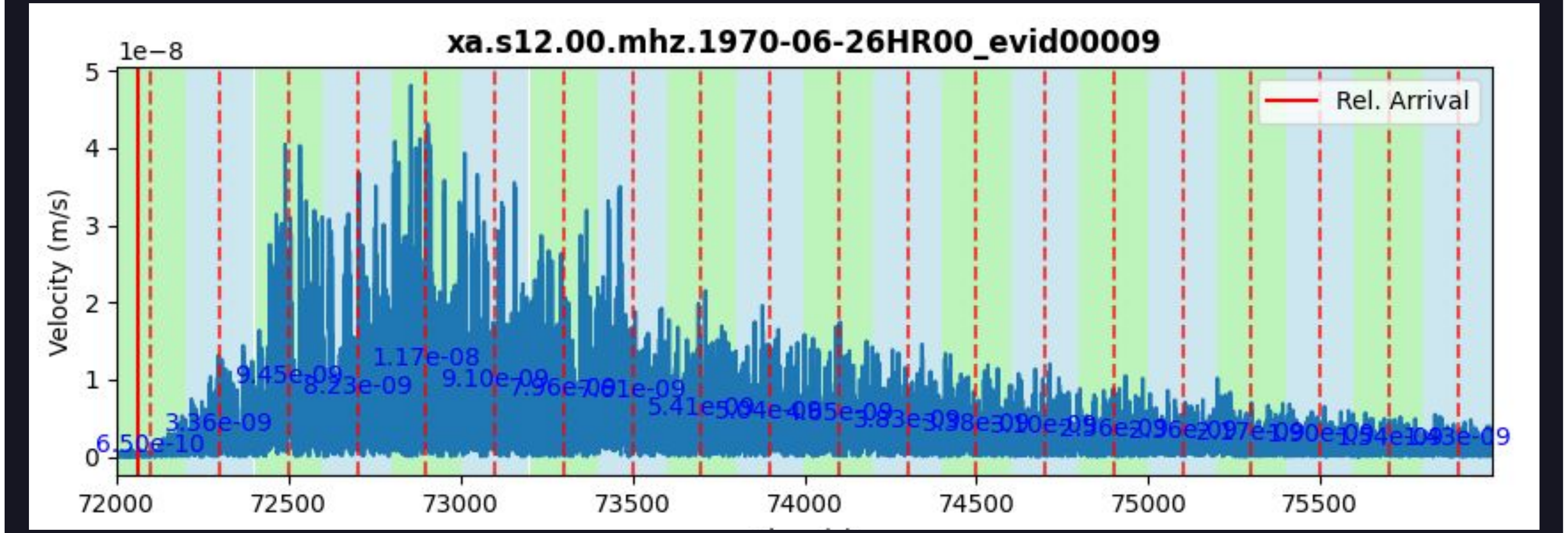
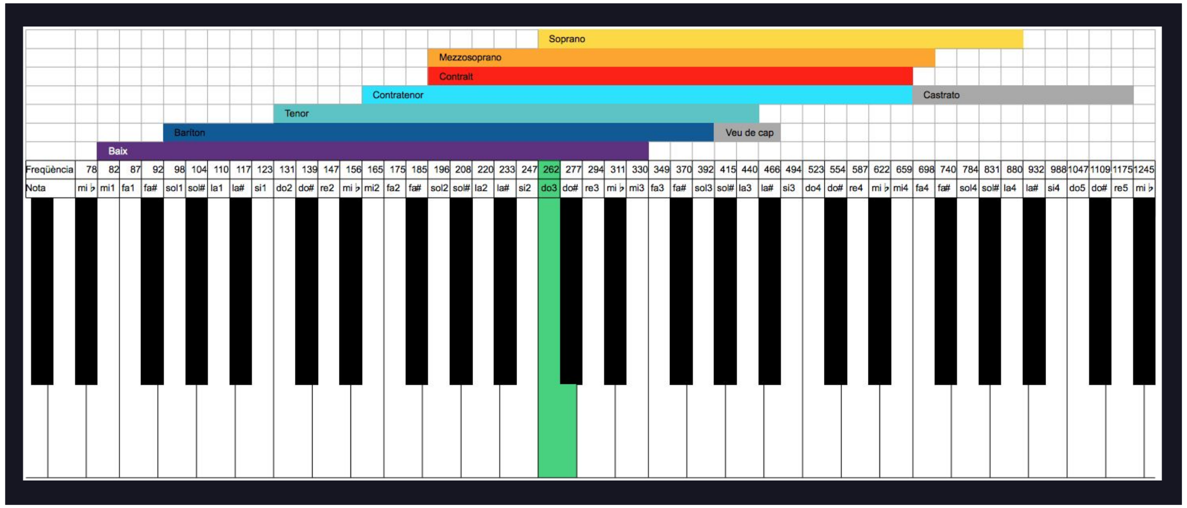
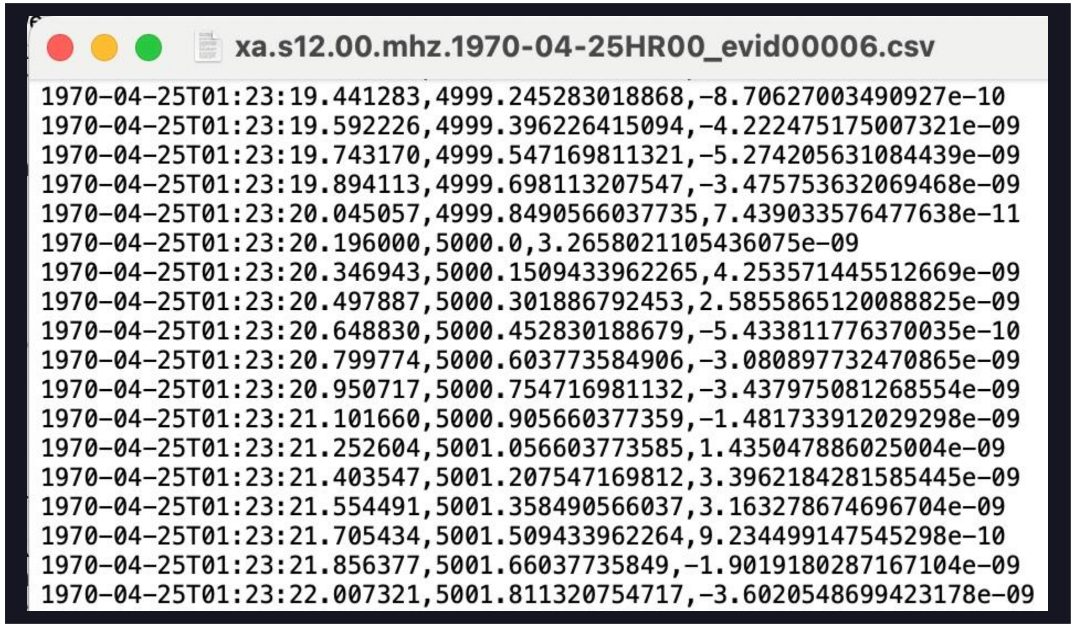




Freqüència	78	82	87	92	98	104	110	117	123	131	139	147	156	165	175	185	196	208	220	233	247	262	277	294	311
Nota	mi ♭	mi1	fa1	fa#	sol1	sol#	la1	la#	si1	do2	do#	re2	mi ♭	mi2	fa2	fa#	sol2	sol#	la2	la#	si2	do3	do#	re3	mi ♭

Freqüència	330	349	370	392	415	440	466	494	523	554	587	622	659	698	740	784	831	880	932	988	1047	1109	1175	1245
Nota	mi3	fa3	fa#	sol3	sol#	la3	la#	si3	do4	do#	re4	mi ♭	mi4	fa4	fa#	sol4	sol#	la4	la#	si4	do5	do#	re5	mi ♭


xa.s12.00.mhz.1970-04-25HR00_evid00006.csv

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1970-04-25T01:23:19.592226,4999.396226415094,-4.222475175007321e-09
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1970-04-25T01:23:19.894113,4999.698113207547,-3.475753632069468e-09
1970-04-25T01:23:20.045057,4999.8490566037735,7.439033576477638e-11
1970-04-25T01:23:20.196000,5000.0,3.2658021105436075e-09
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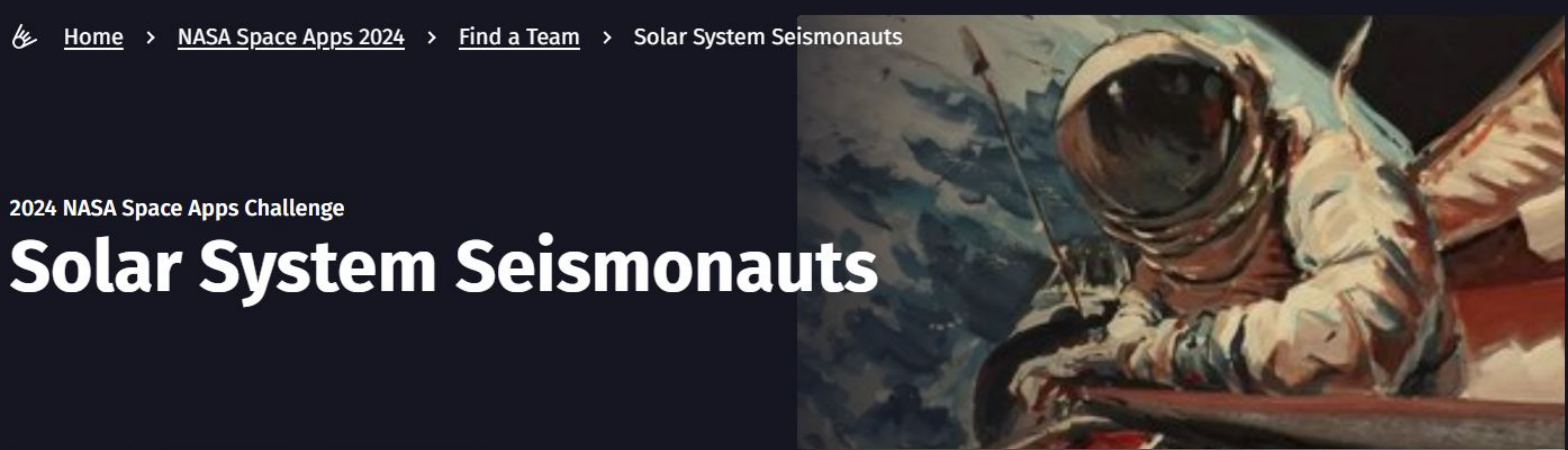
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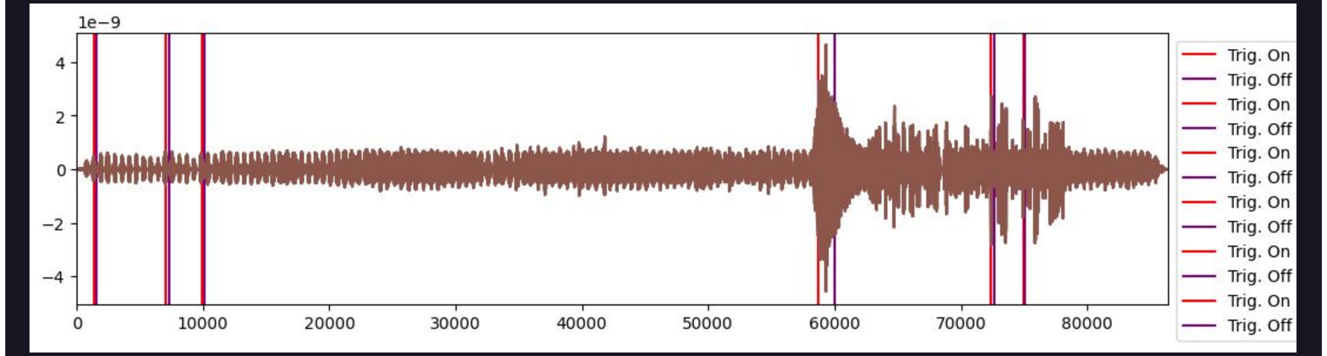
2024 NASA Space Apps Challenge

Solar System Seismonauts

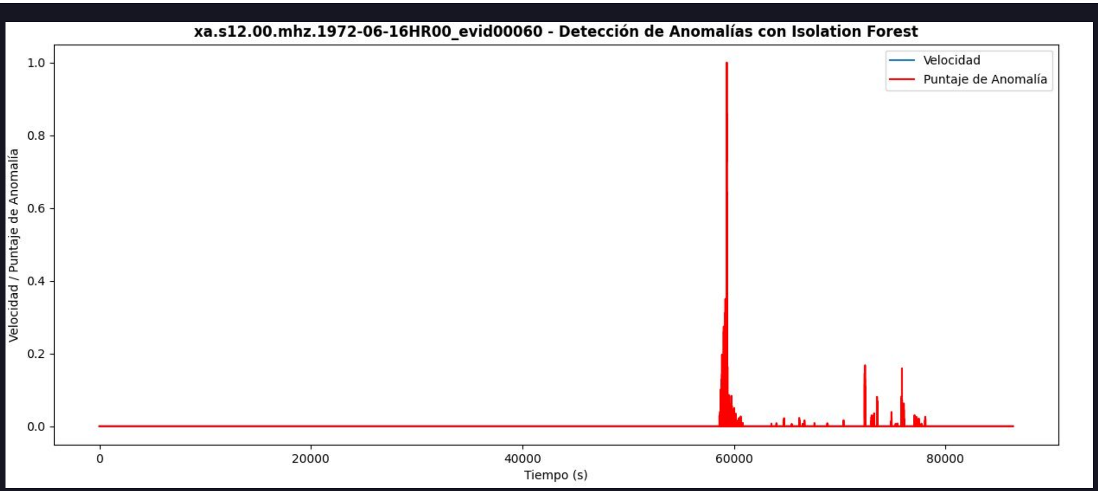
2024 NASA Space Apps Challenge

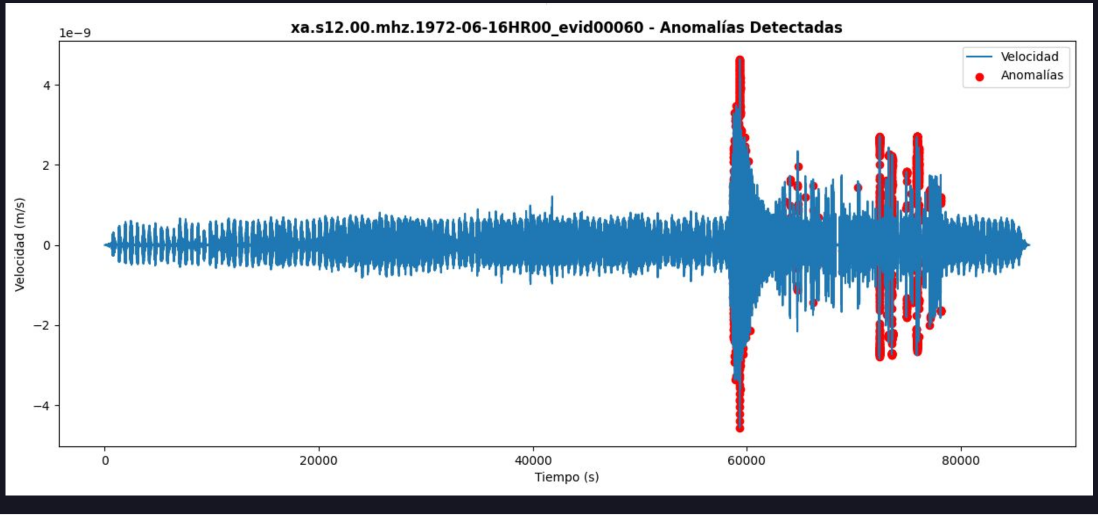
Seismic Detection Across the Solar System

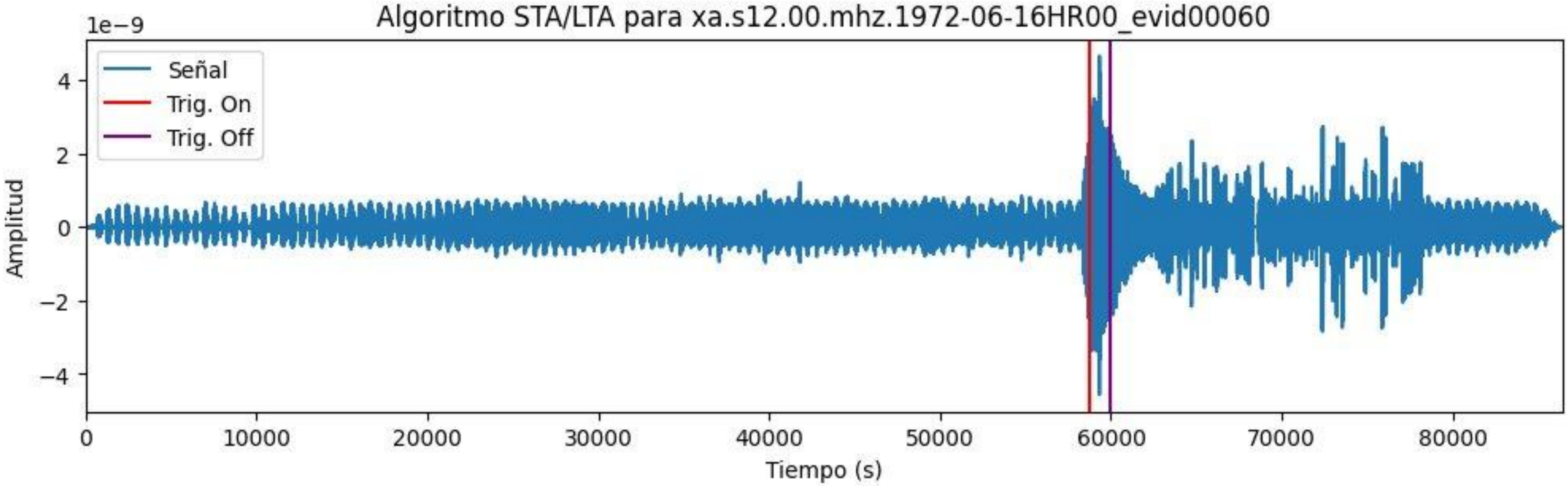
STA/LTA



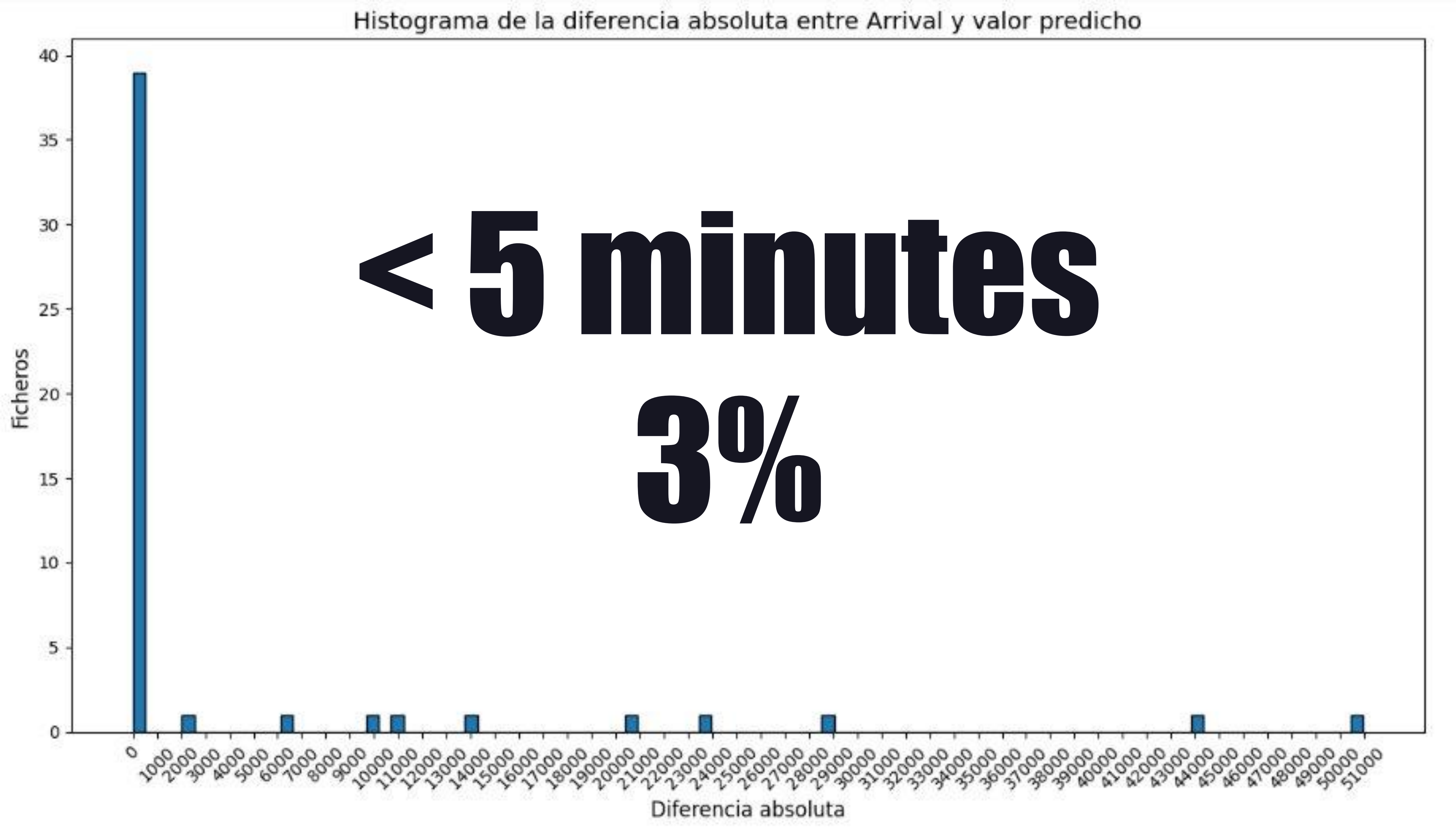
ISOLATION FOREST


xa.s12.00.mhz.1972-06-16HR00_evid00060 - Detección de Anomalías con Isolation Forest


xa.s12.00.mhz.1972-06-16HR00_evid00060 - Anomalías Detectadas



Algoritmo STA/LTA para xa.s12.00.mhz.1972-06-16HR00_evid00060


Histograma de la diferencia absoluta entre Arrival y valor predicho
Ficheros
0
5
10
15
20
25
30
35
40
Diferencia absoluta
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000
13000
14000
15000
16000
17000
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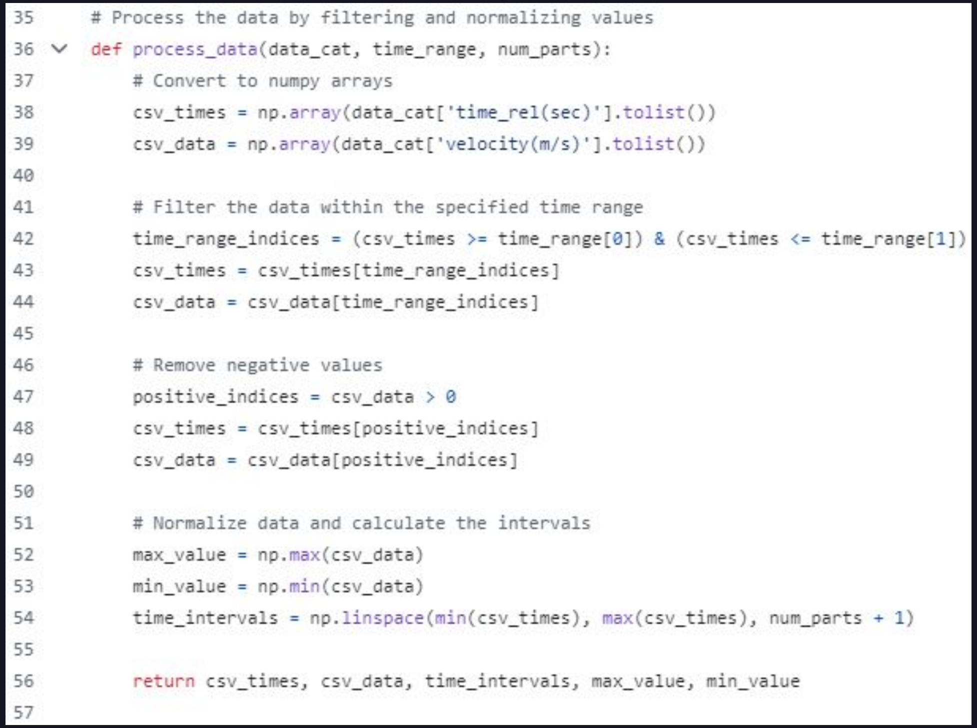
36000
37000
38000
39000
40000
41000
42000
43000
44000
45000
46000
47000
48000
49000
50000
51000

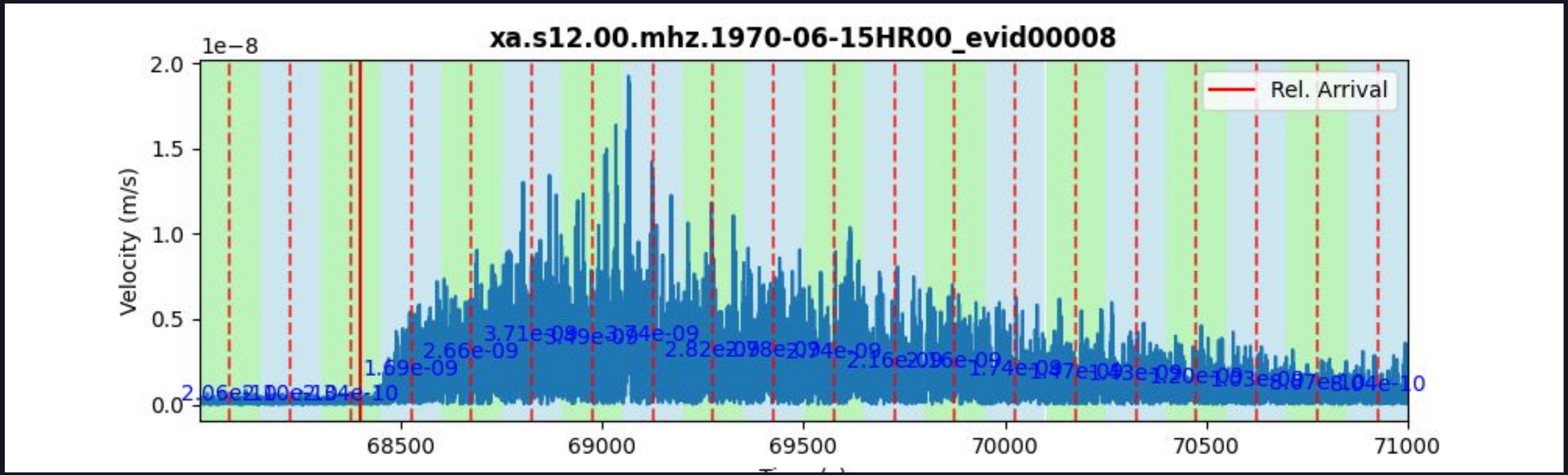
< 5 minutes

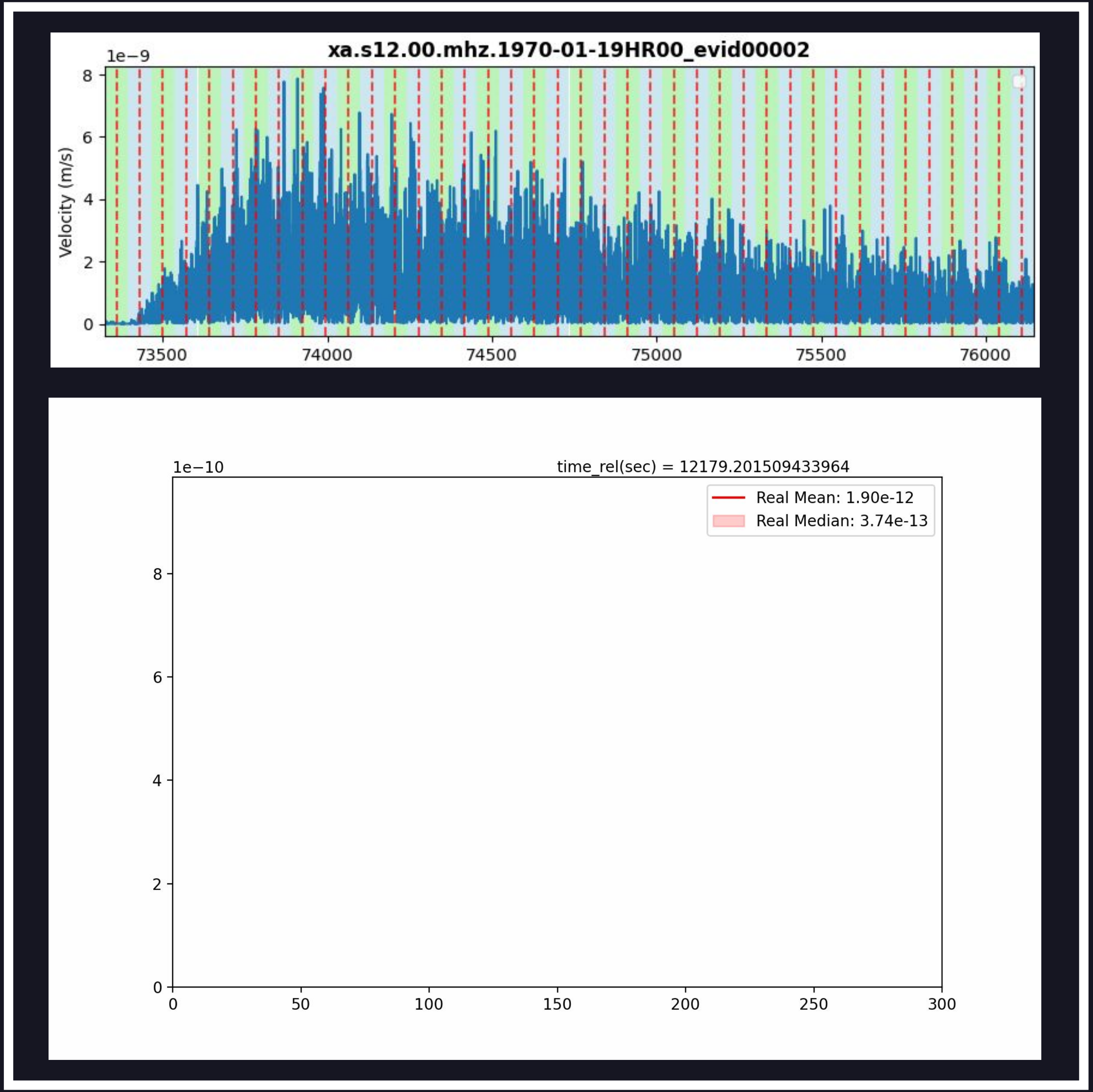
3%

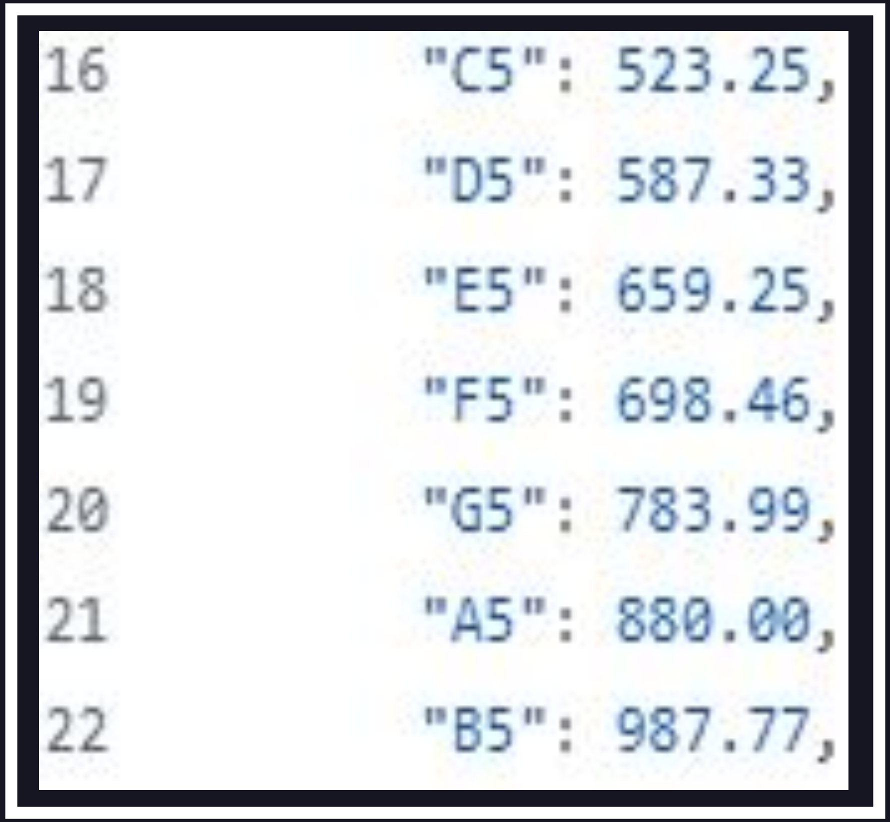
SONIFICATION



```python
# Process the data by filtering and normalizing values
def process_data(data_cat, time_range, num_parts):
    # Convert to numpy arrays
    csv_times = np.array(data_cat['time_rel(sec)'].tolist())
    csv_data = np.array(data_cat['velocity(m/s)'].tolist())

    # Filter the data within the specified time range
    time_range_indices = (csv_times >= time_range[0]) & (csv_times <= time_range[1])
    csv_times = csv_times[time_range_indices]
    csv_data = csv_data[time_range_indices]

    # Remove negative values
    positive_indices = csv_data > 0
    csv_times = csv_times[positive_indices]
    csv_data = csv_data[positive_indices]

    # Normalize data and calculate the intervals
    max_value = np.max(csv_data)
    min_value = np.min(csv_data)
    time_intervals = np.linspace(min(csv_times), max(csv_times), num_parts + 1)

    return csv_times, csv_data, time_intervals, max_value, min_value

```







```
                "C5": 523.25,
                "D5": 587.33,
                "E5": 659.25,
                "F5": 698.46,
                "G5": 783.99,
                "A5": 880.00,
                "B5": 987.77,
```

WAV