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## Abstract

We are building the most sensitive radio telescope. The probability to pick up anthropogenic emission is increasing. To produce trustworthy science, we need to remove all potential corruption. We present the method to understand and flag the high and low outlier in radio signal.

## Data

SKA-MPIfR (SKAMPI) telescope prototype dish.  
 Frequency: 1.6 - 3.5 GHz  
 No. channels: 65537

## Methods and Result

Step 1 - Baseline Correction: to enhance the detectability of RFI, a baseline correction was applied using the Asymmetric Least Squares (ALS) method.

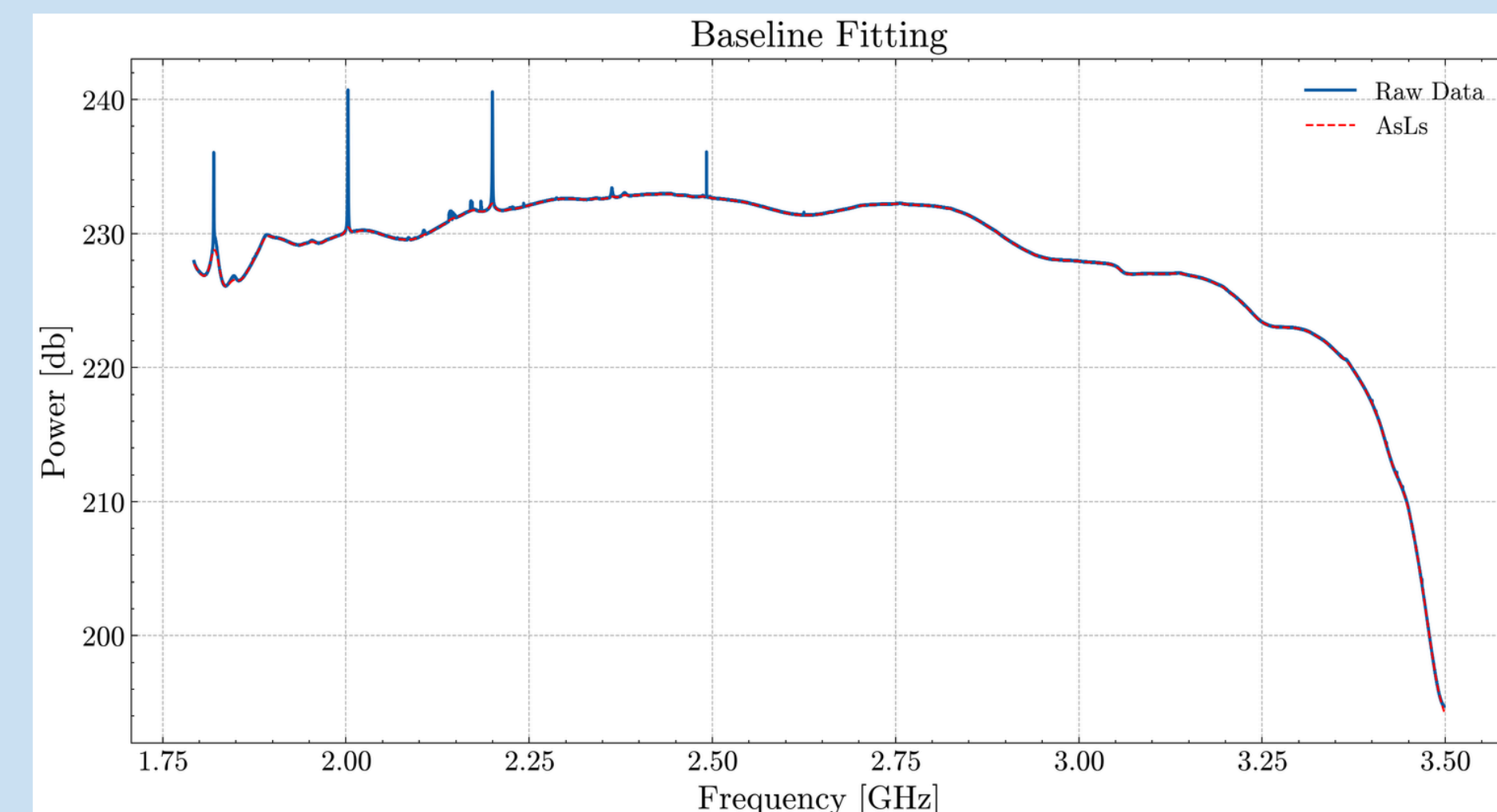


Fig. 1: Baseline fitting using Asymmetric Least Squares method.

### Step 2: RFI Detection From Detrended Signal

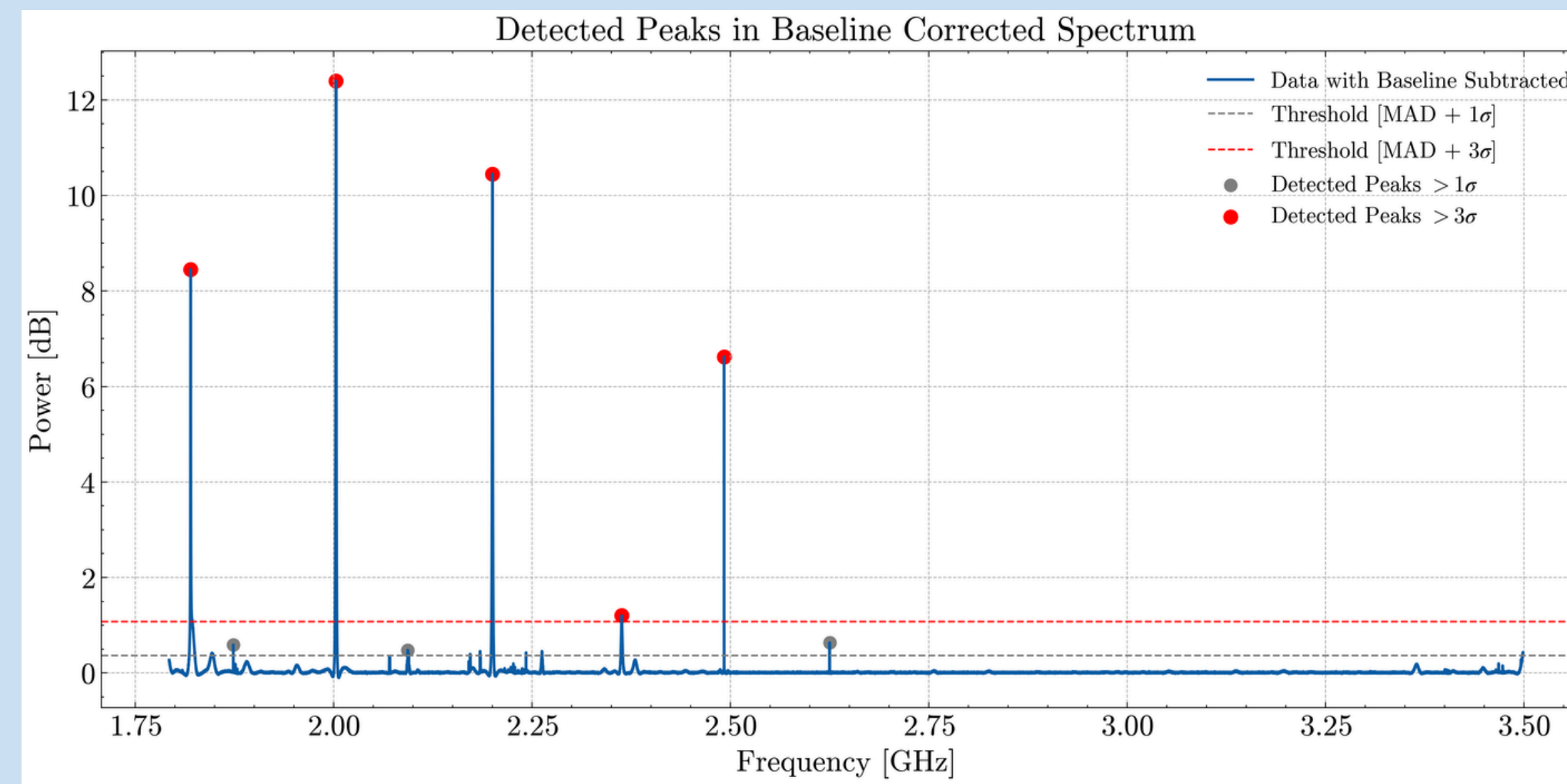


Fig. 2: Peak identification on the baseline detrend power spectrum.

### Step 3: Characterize the High and Low Level RFI

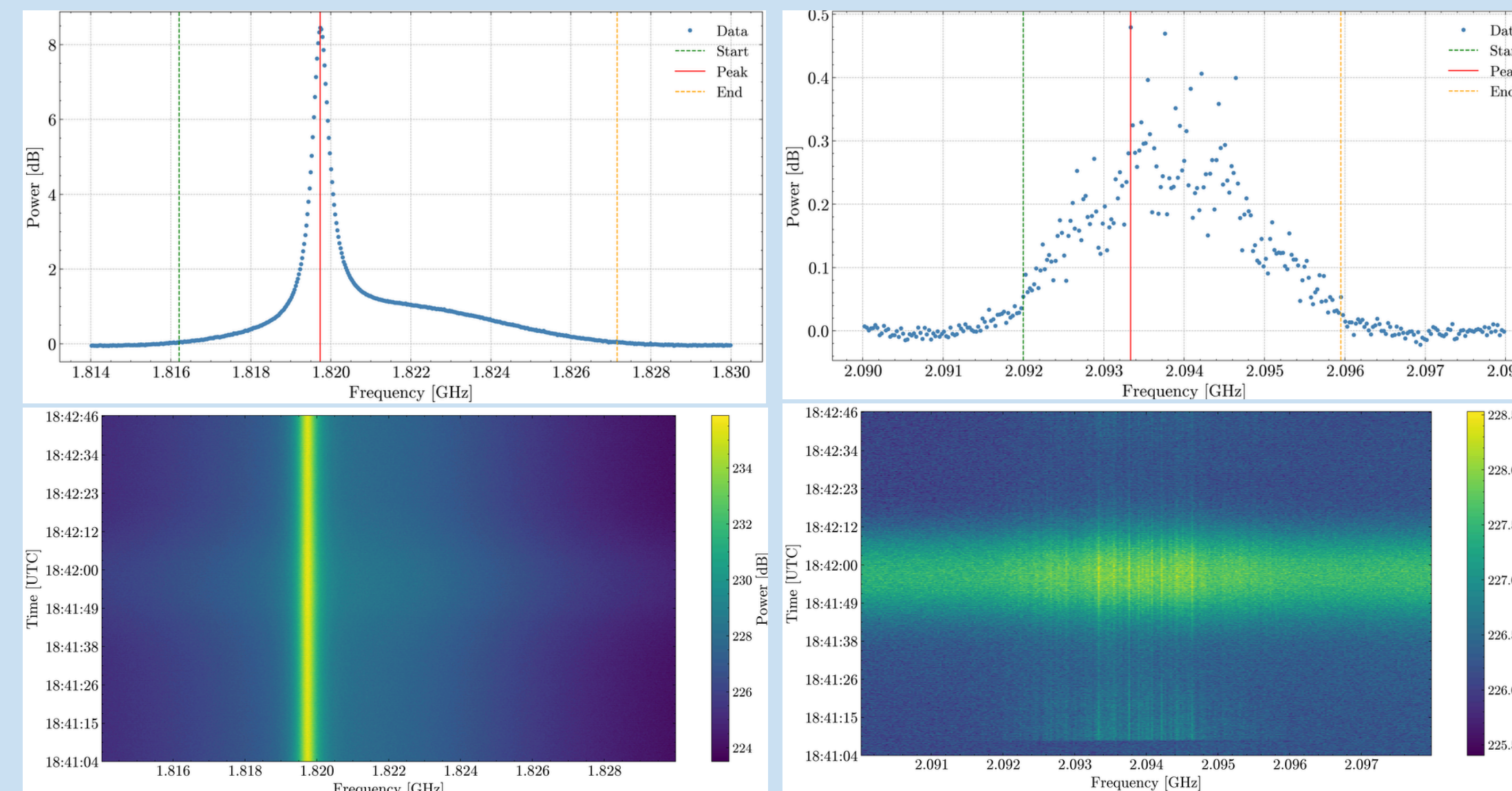


Fig. 3: Peak identification on the baseline detrend power spectrum.

### Step 4: Classify and Quantify RFI

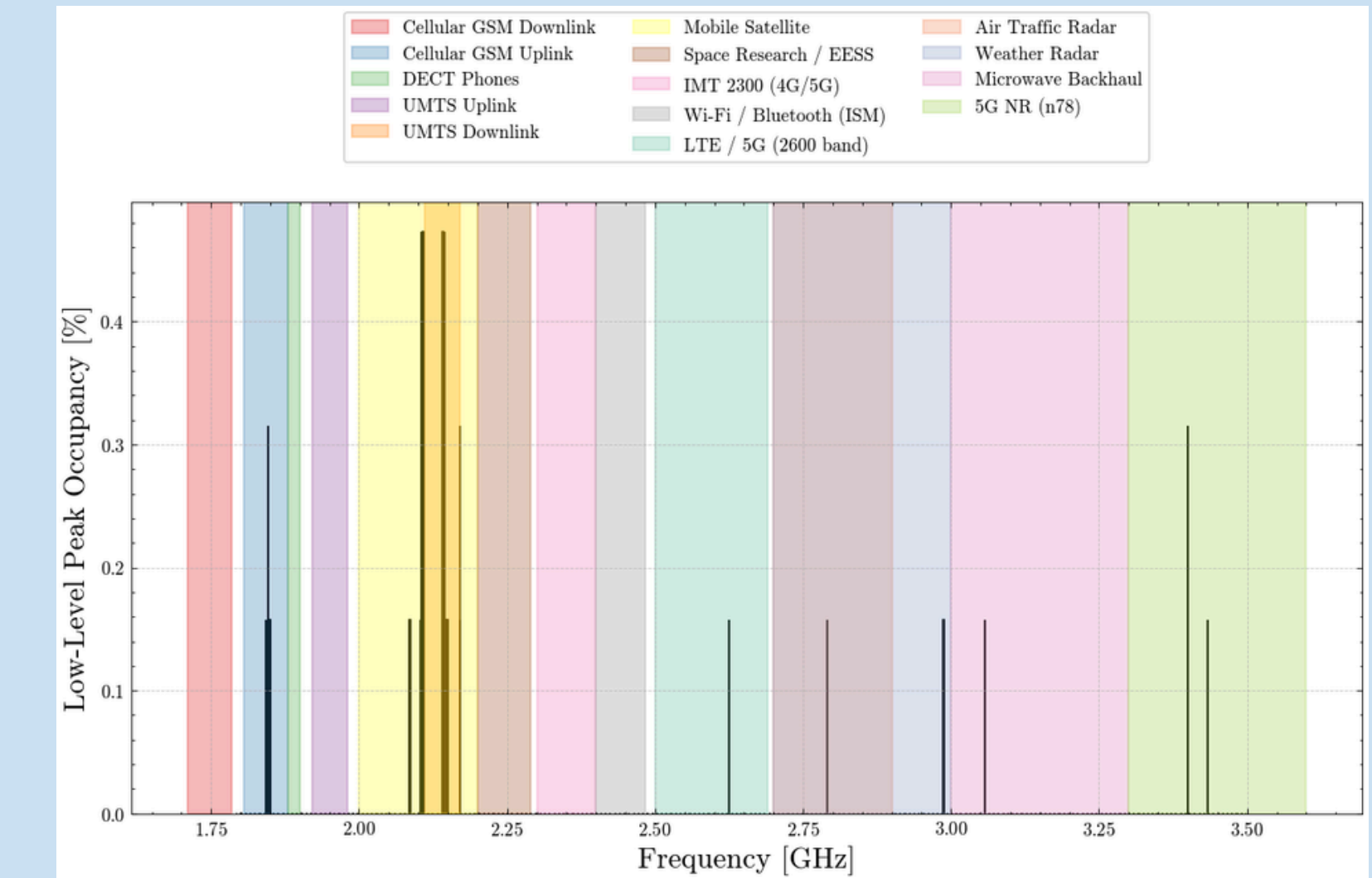


Fig. 4: Low level peaks temporal occupancy.

### Step 5 - Potential Anthropogenic RFI

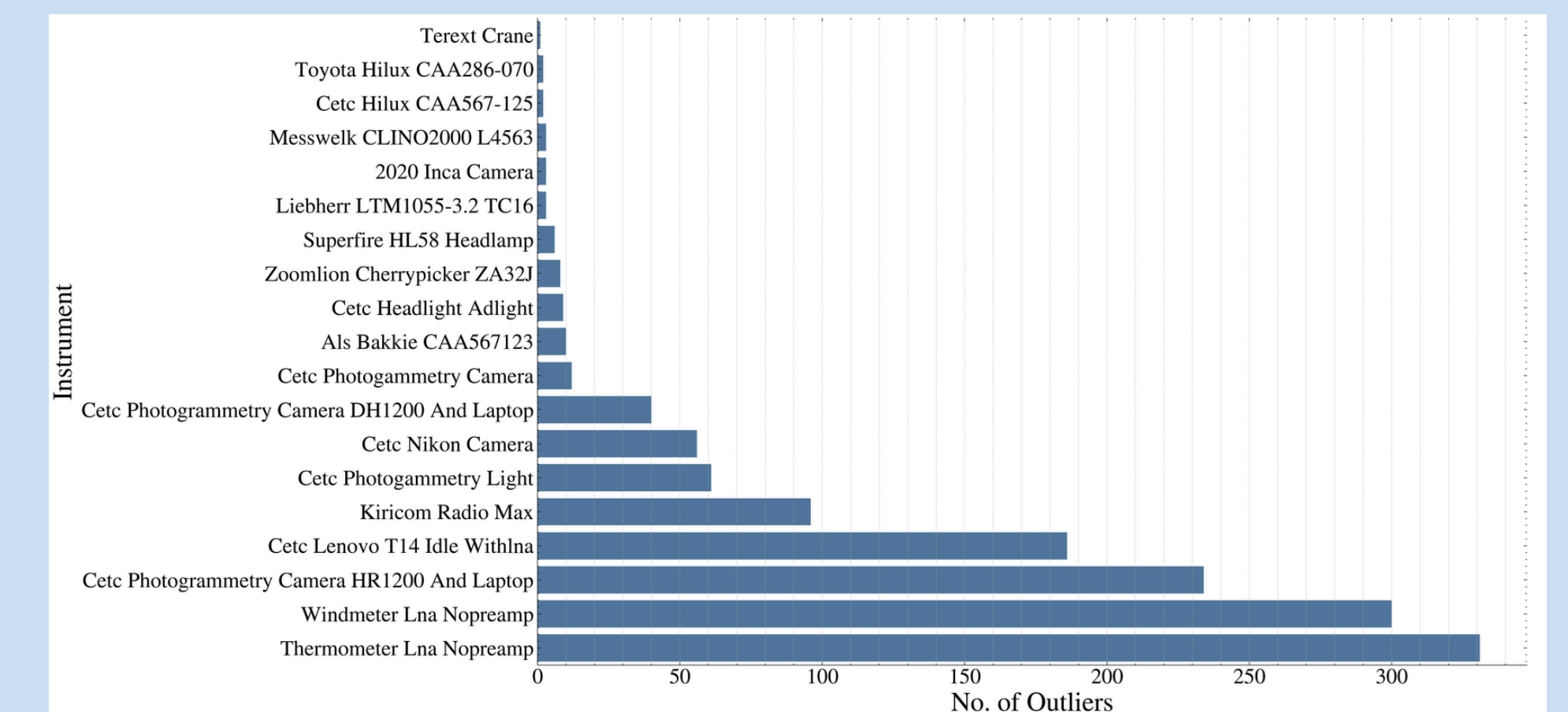


Fig. 5: Number of outlier identified by combine STD, IQR and Z-score.

## Conclusion

We identify and characterize the potential anthropogenic RFI, using the methodologies and tools presented. The next step is to fully characterize potential harmonics and their sources.