

**Joint SoLO/RPW & PSP/FIELDS meeting  
26-29 Feb 2024 in Orléans, France**

Joint RPW/FIELDS Consortia meeting



**Joint SoLO/RPW  
& PSP/FIELDS  
meeting**

26-29 February 2024  
Hotel Dupanloup, Orléans, France

[Register here !](#)

- Radial and magnetic alignments between the SoLO and PSP
- Multipoint observations of solar radio bursts



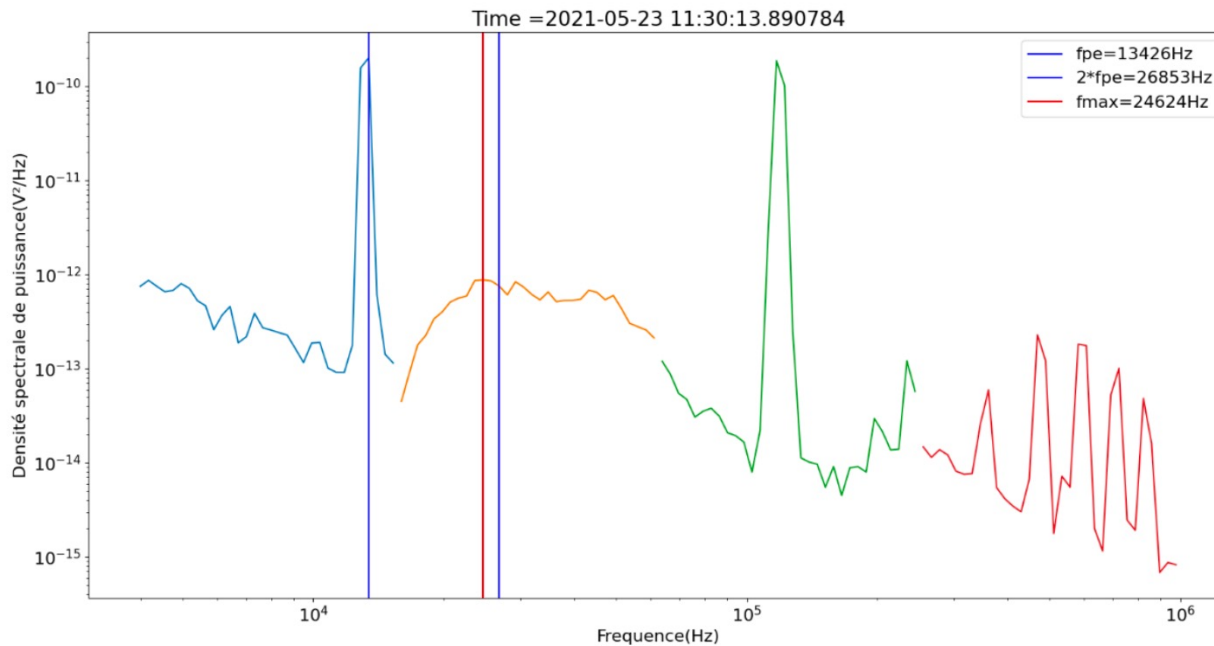
Is there a relation between the plasma frequency and the maximum frequency of the type III radio spectrum ?

M. Kretschmar

# Questions

From Milan :

**5. What is the link between, density and energy of energetic flare electrons – level of density fluctuations – power of the Langmuir Waves – radio power of Type IIIs ?**



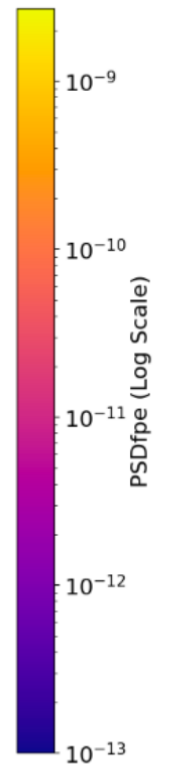
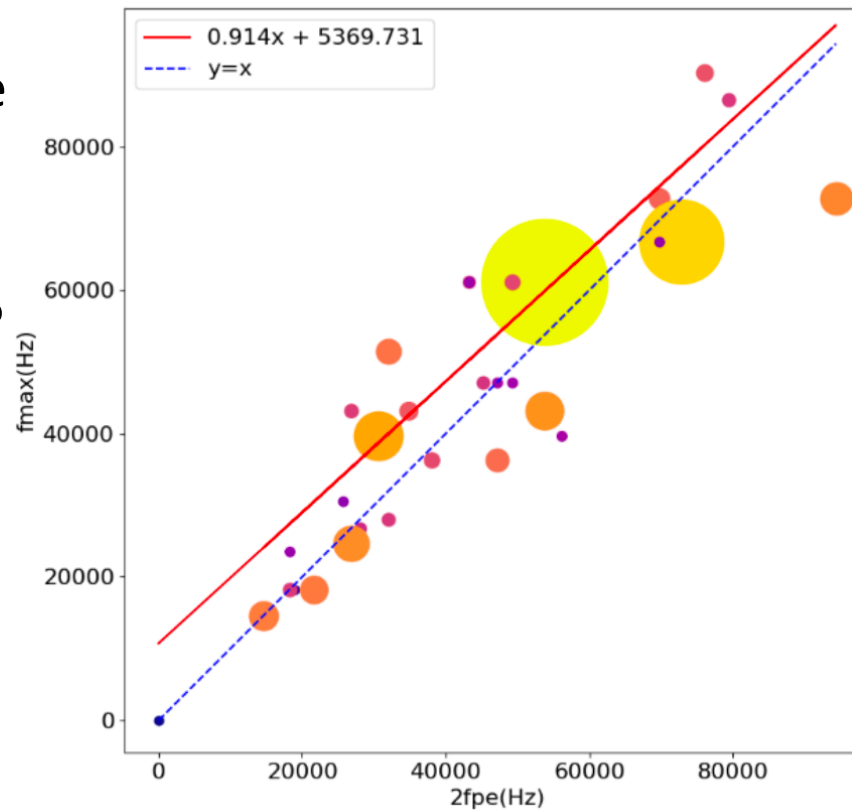
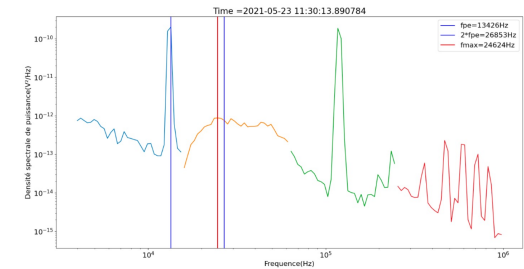
- Is the radio spectrum peaks at  $2 \cdot f_{pe}$  when LW is present ?
- Is this the signature of harmonic emission ? Or some non linear process ? Or other things ?

# Preliminary (student) work

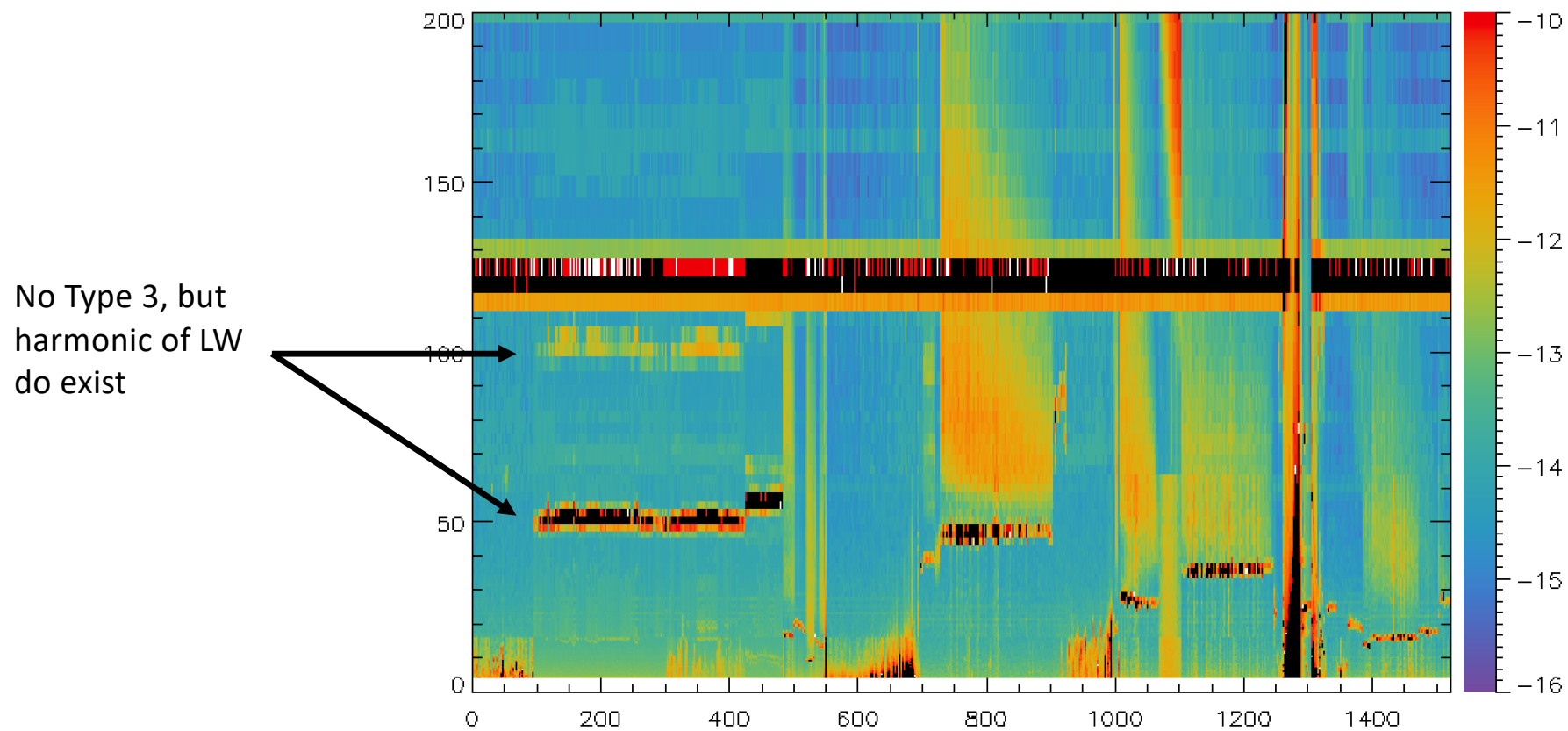
- Preliminary conclusions :

- It seems the radio spectrum peaks near 2 fpe when there is LW
- Why ? Non linear process or signature of harmonic ?

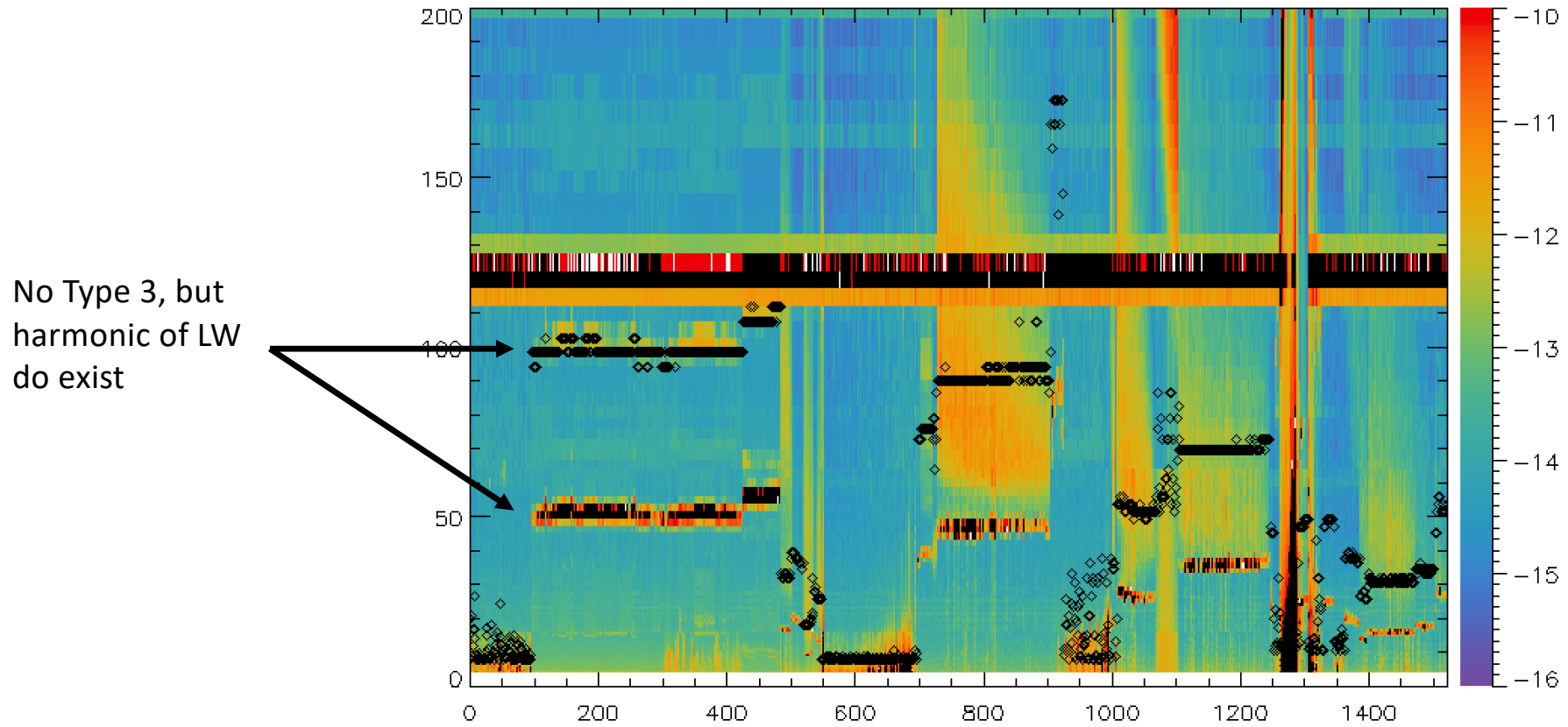
- Is this always true ?



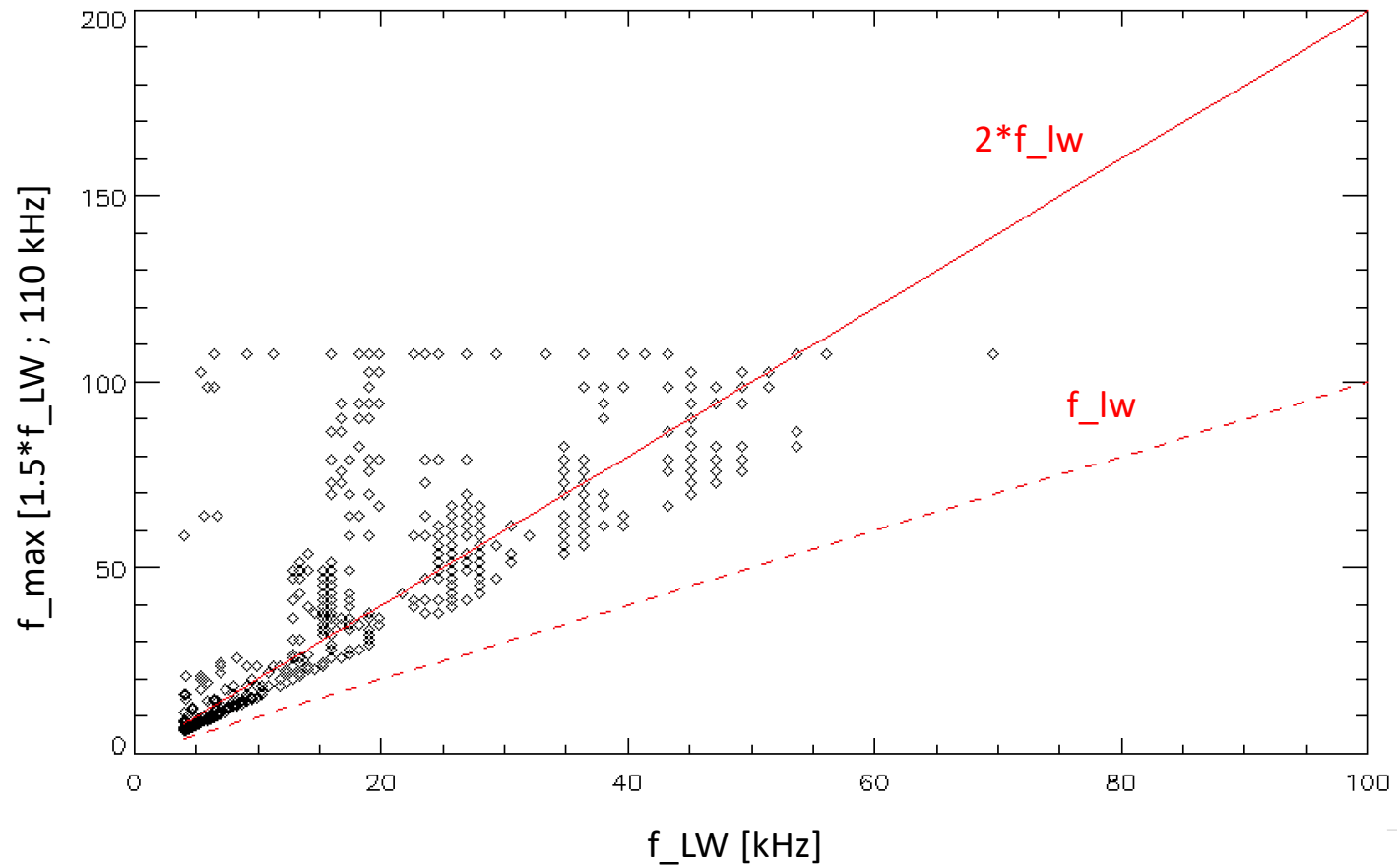
## Automatically Detected LW with Type 3 in 2021



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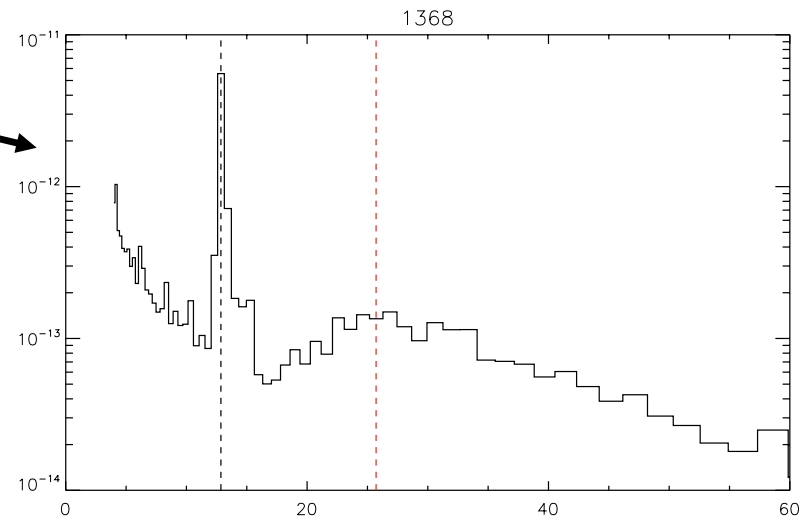
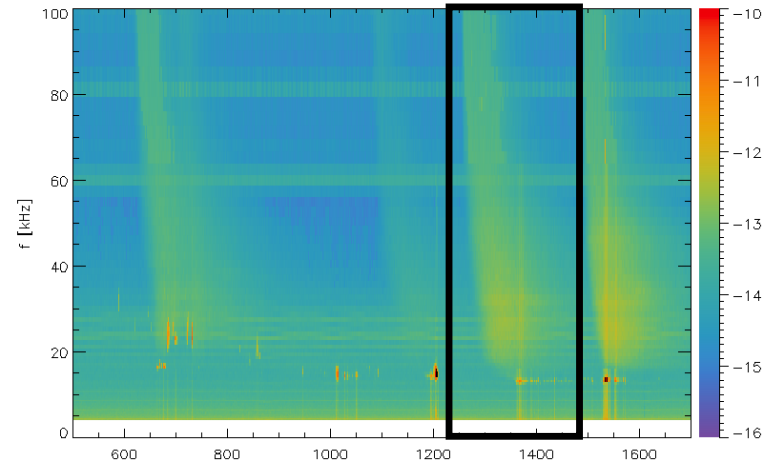
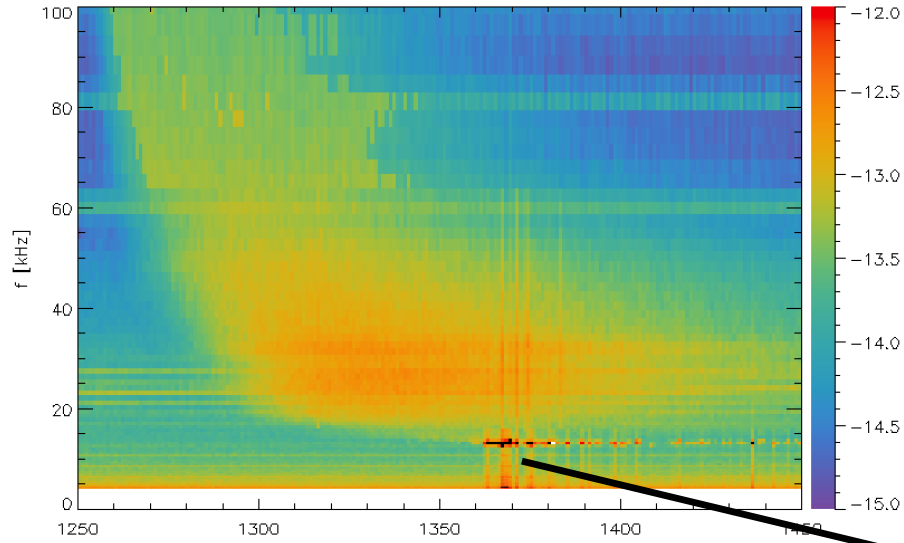


## Automatically Detected LW with Type 3 in 2021





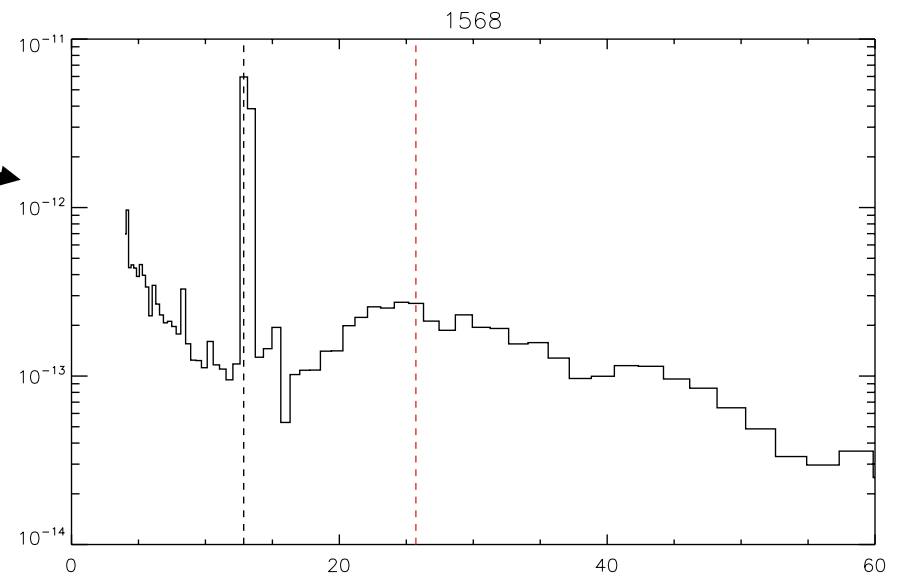
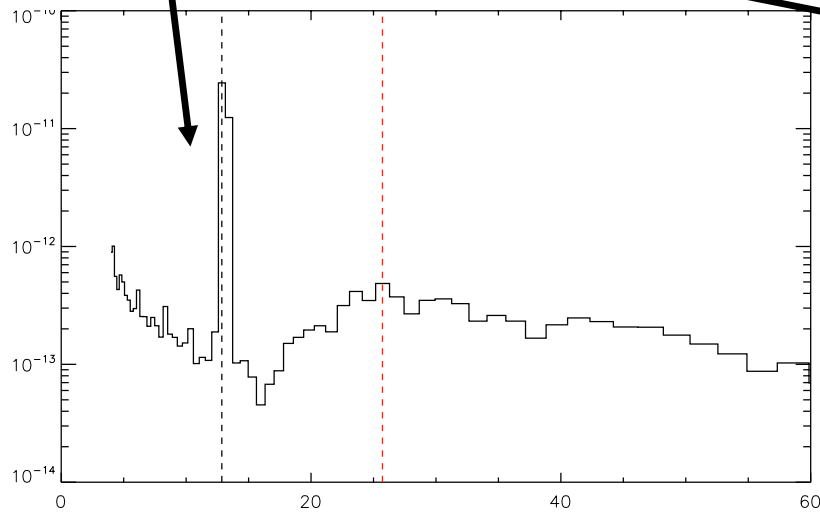
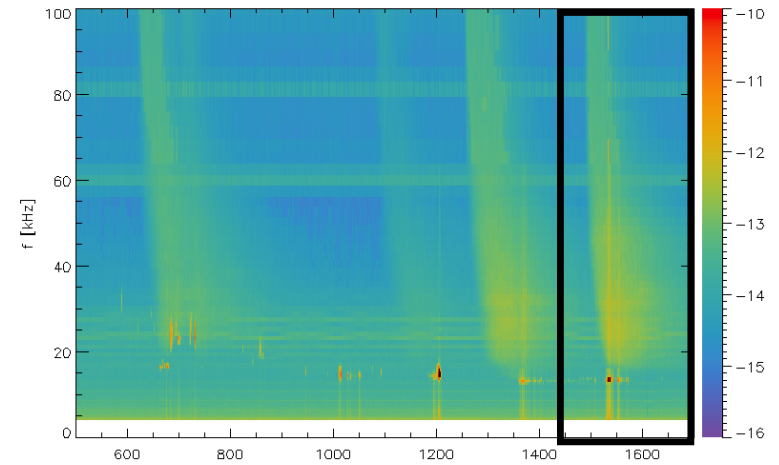
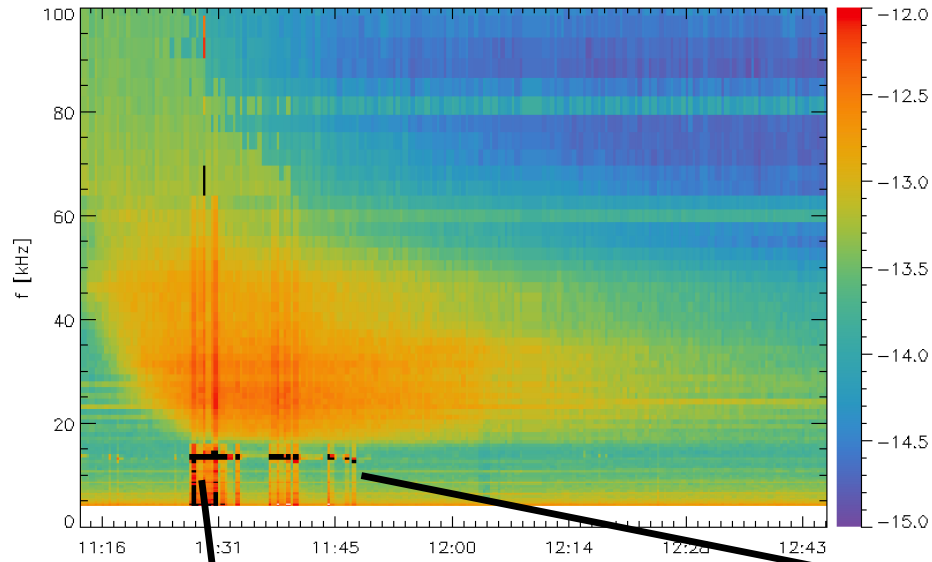
# Example : 23/05/2021





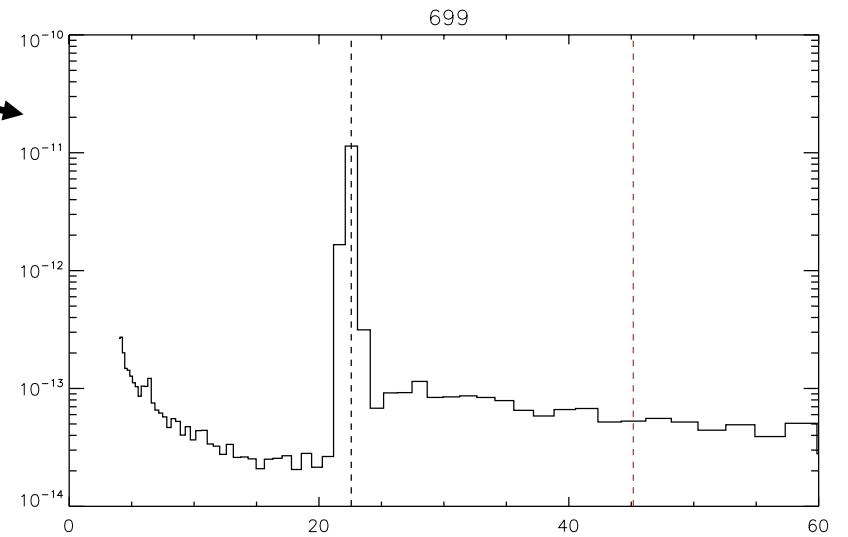
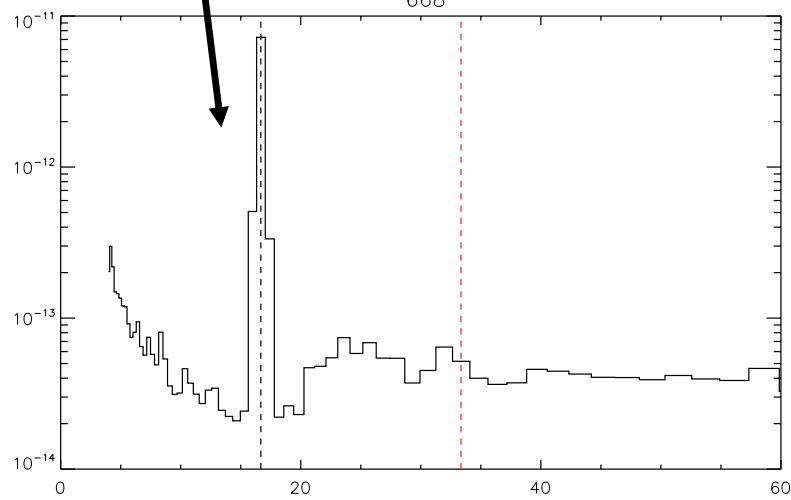
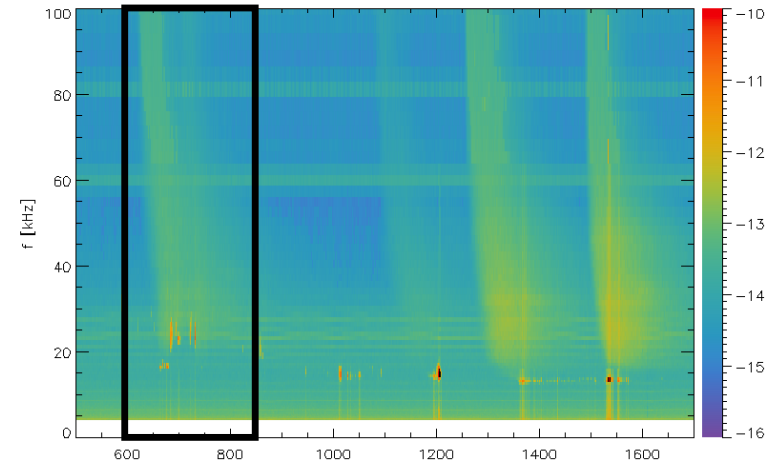
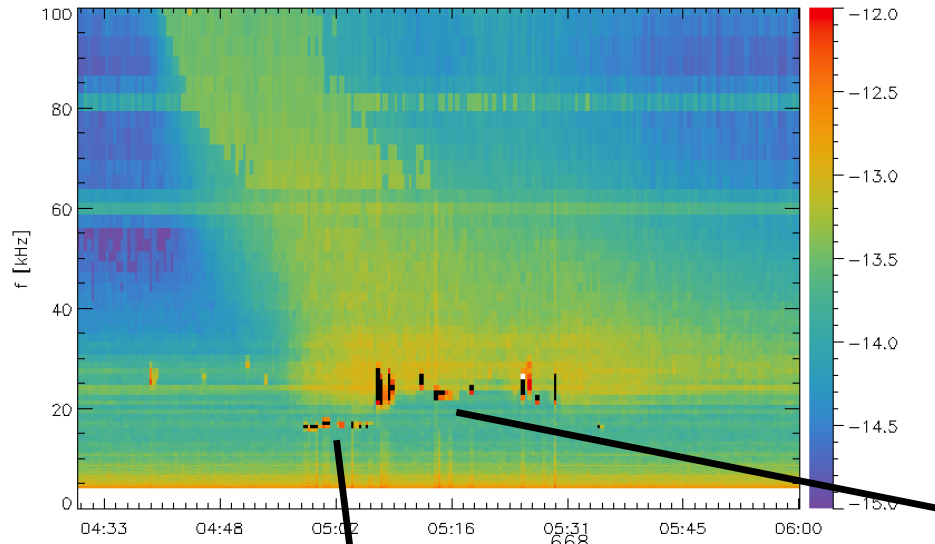


# Example : 23/05/2021



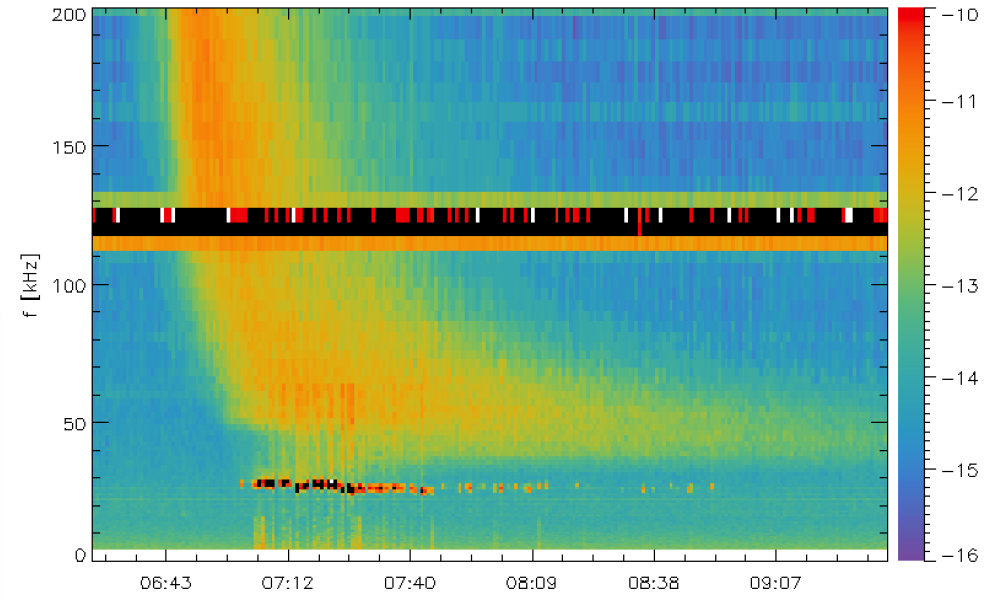
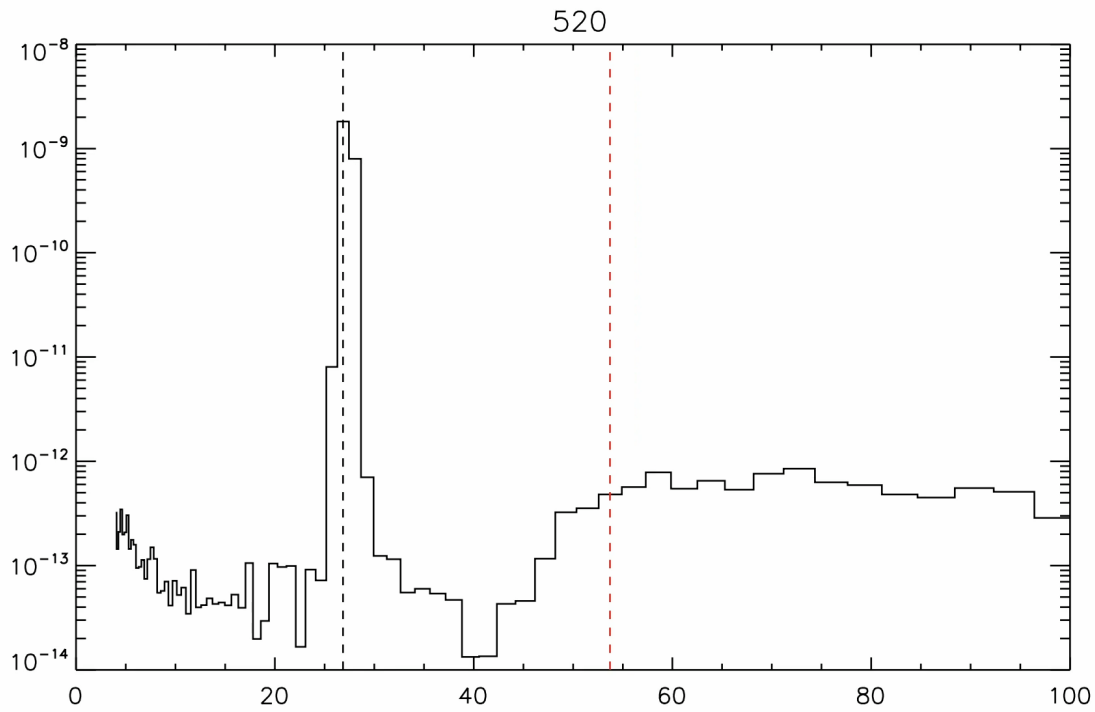


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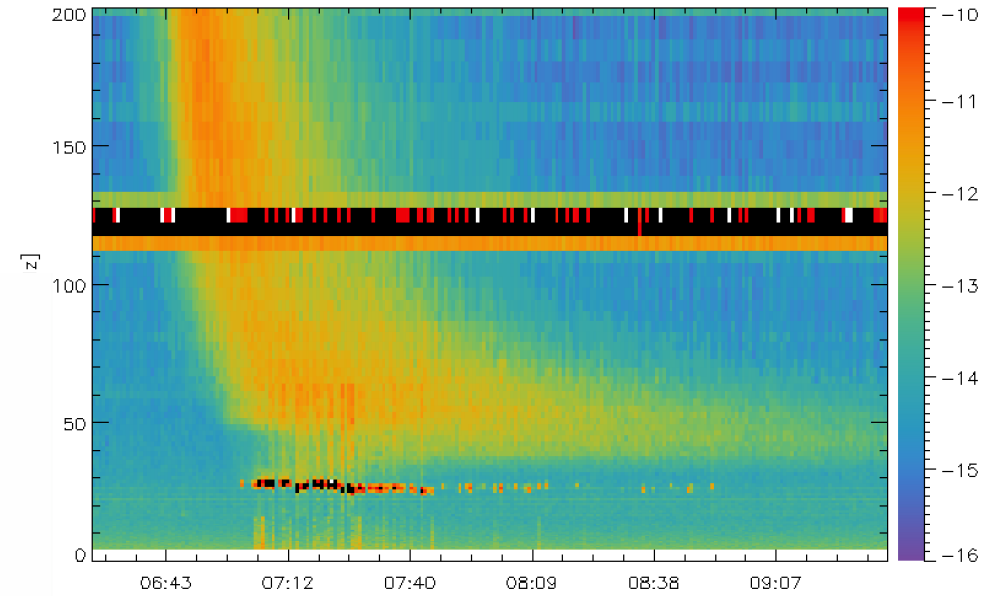
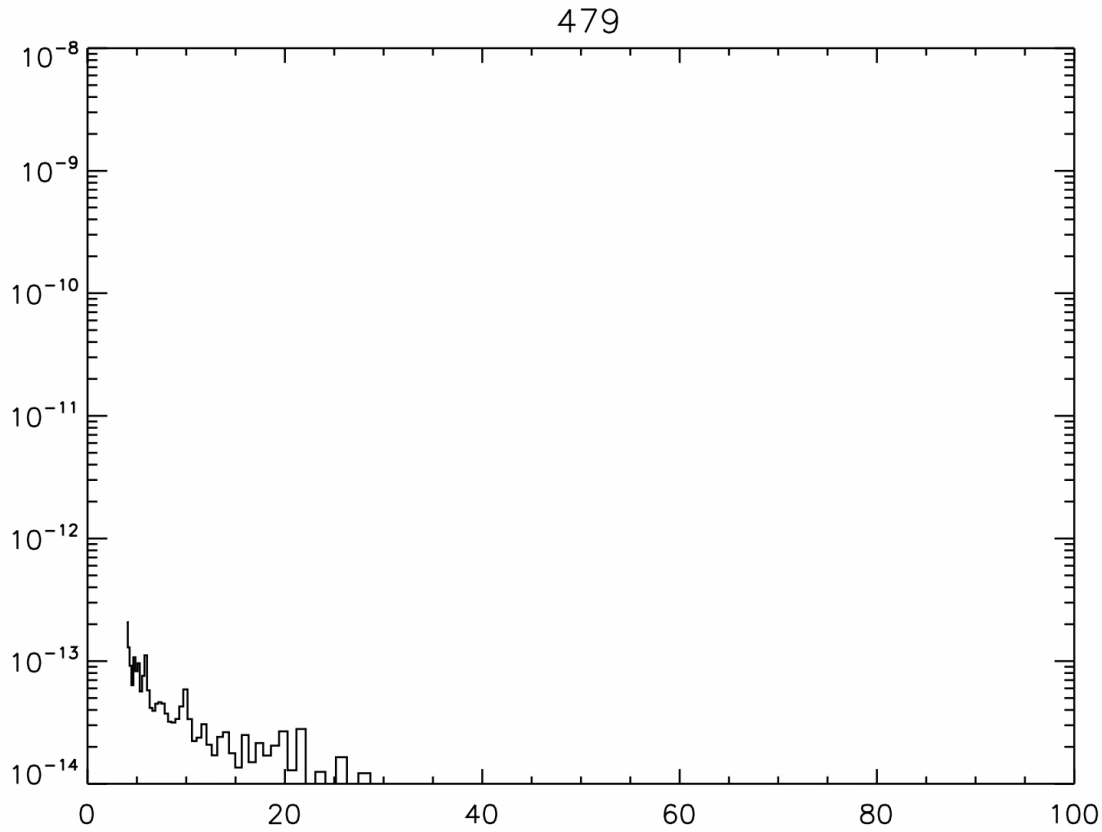


# Example : 09/10/2021





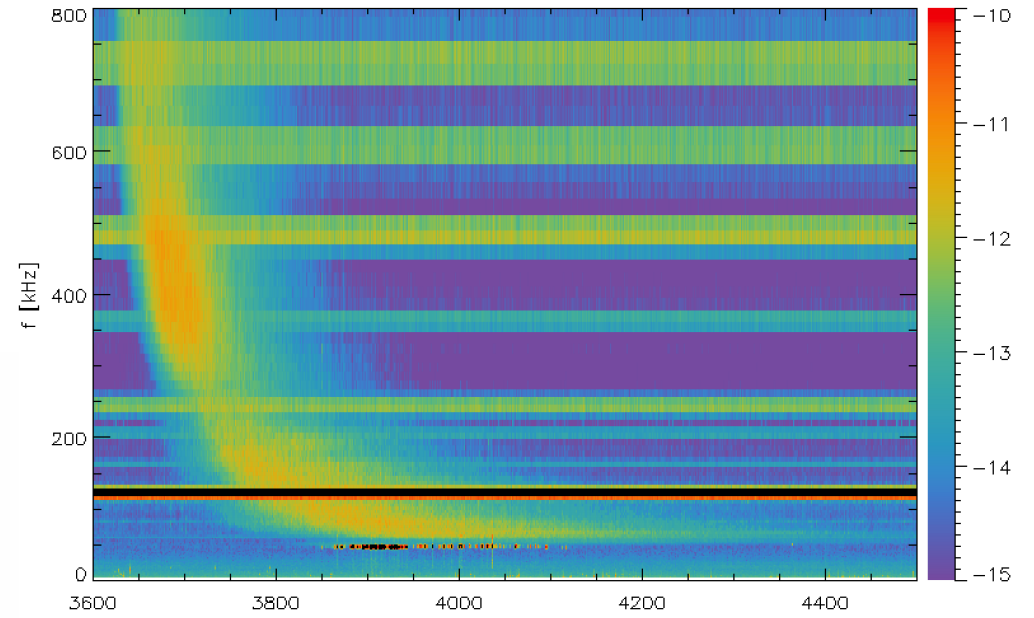
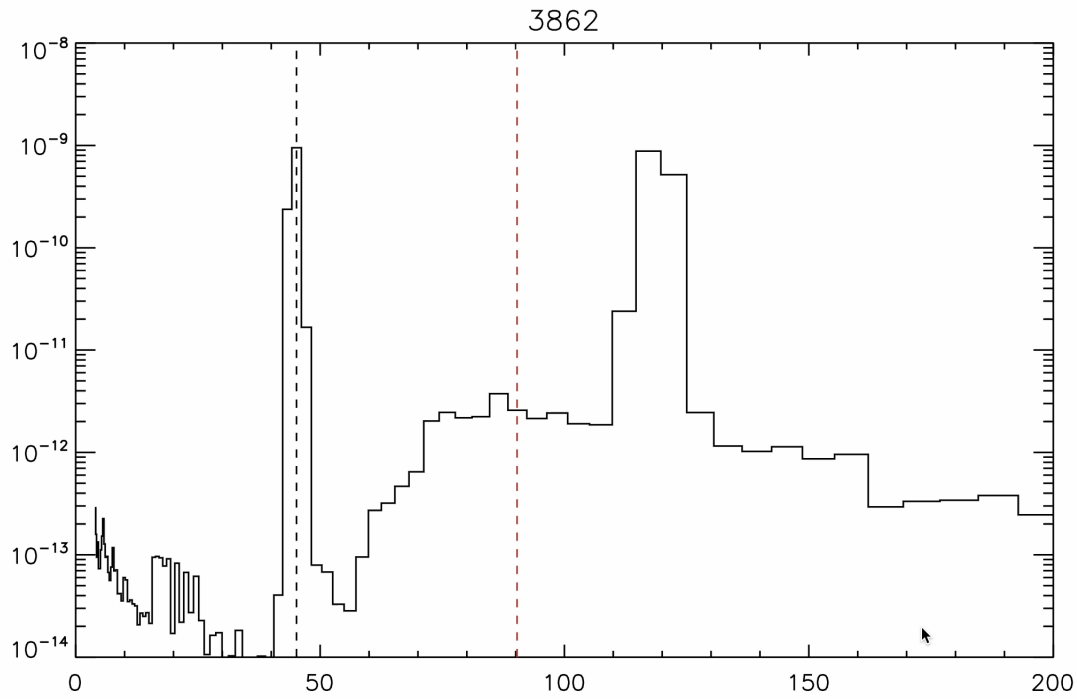
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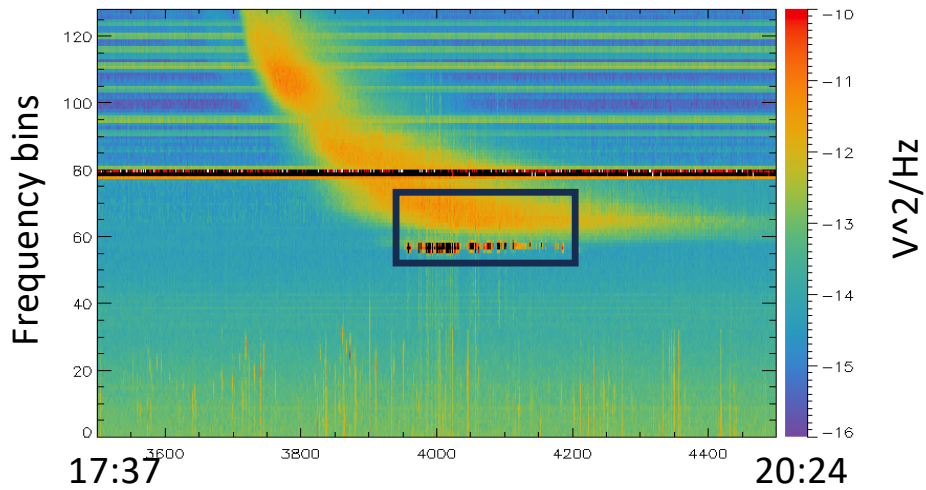
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542,543



# Example : 26/08/2021



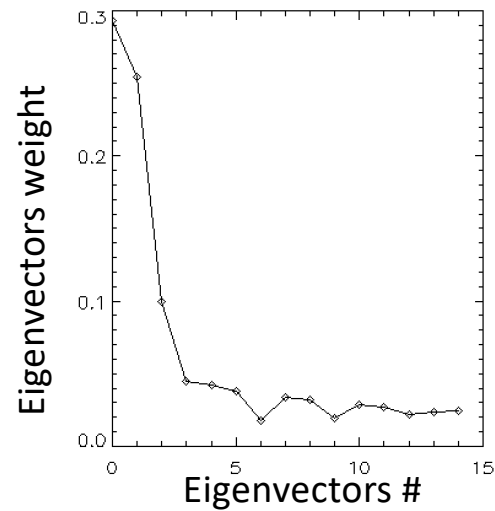
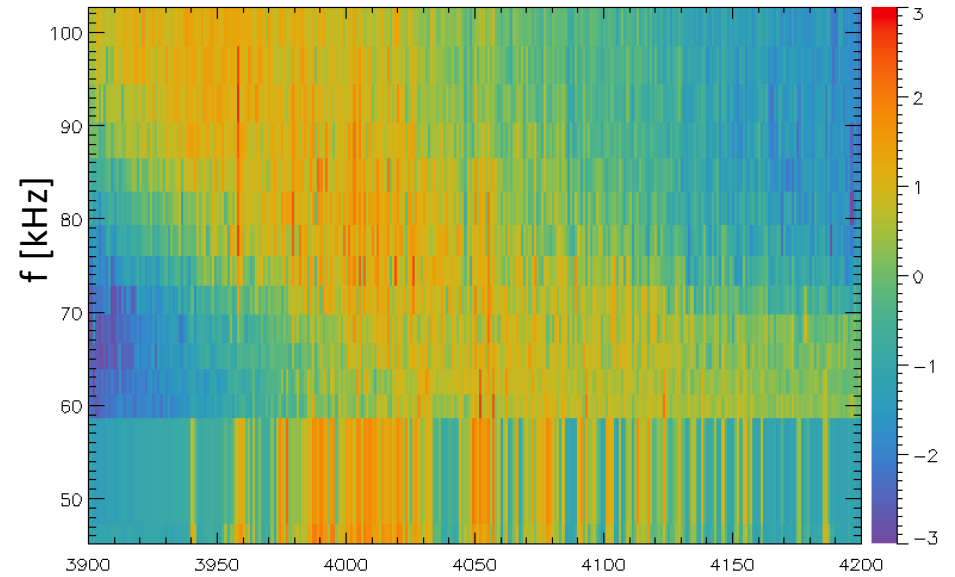
# Example : 26/08/2021

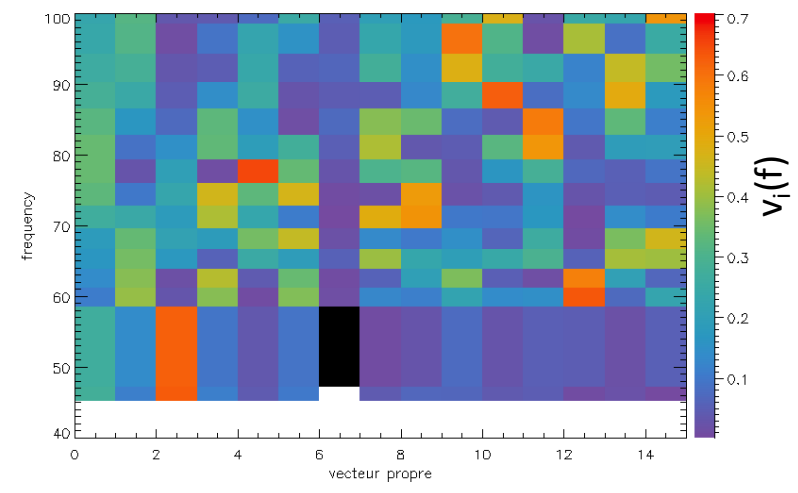
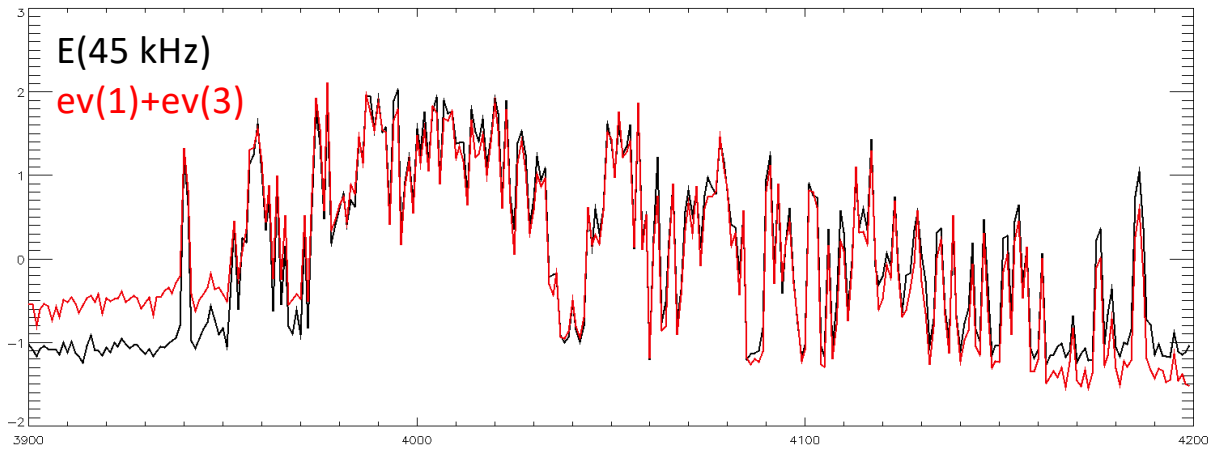
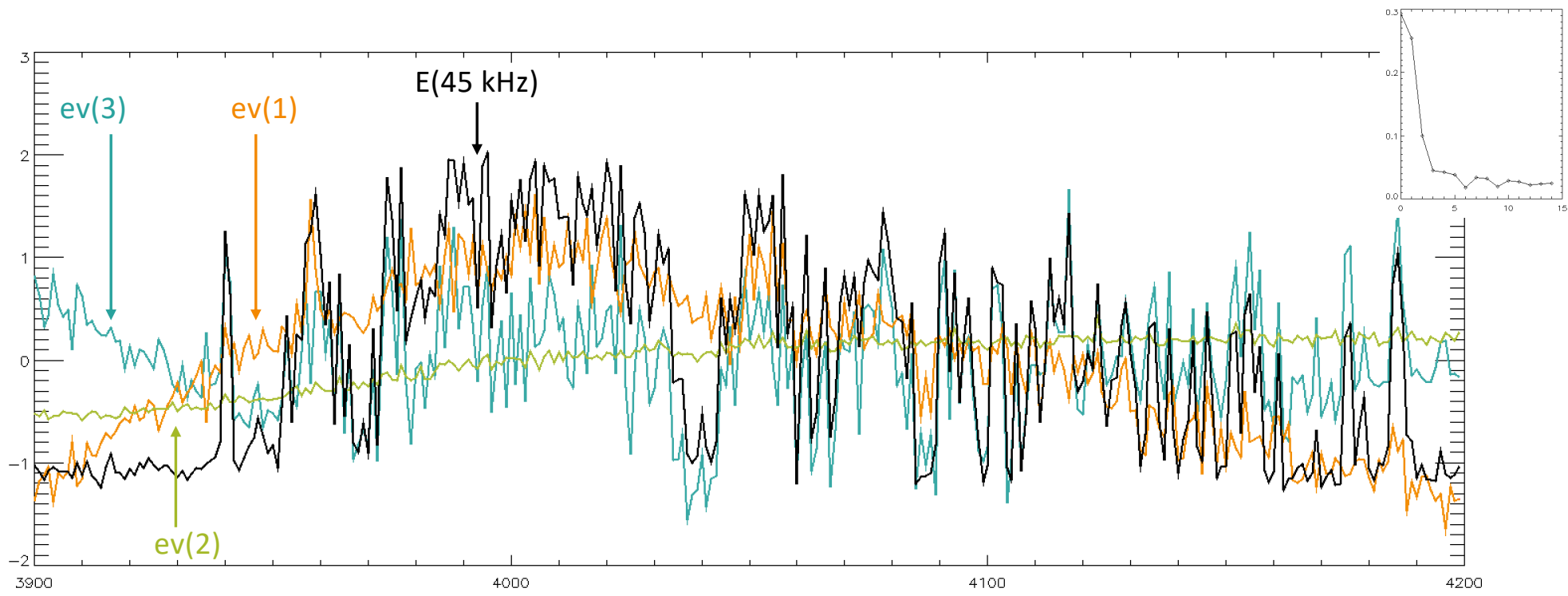


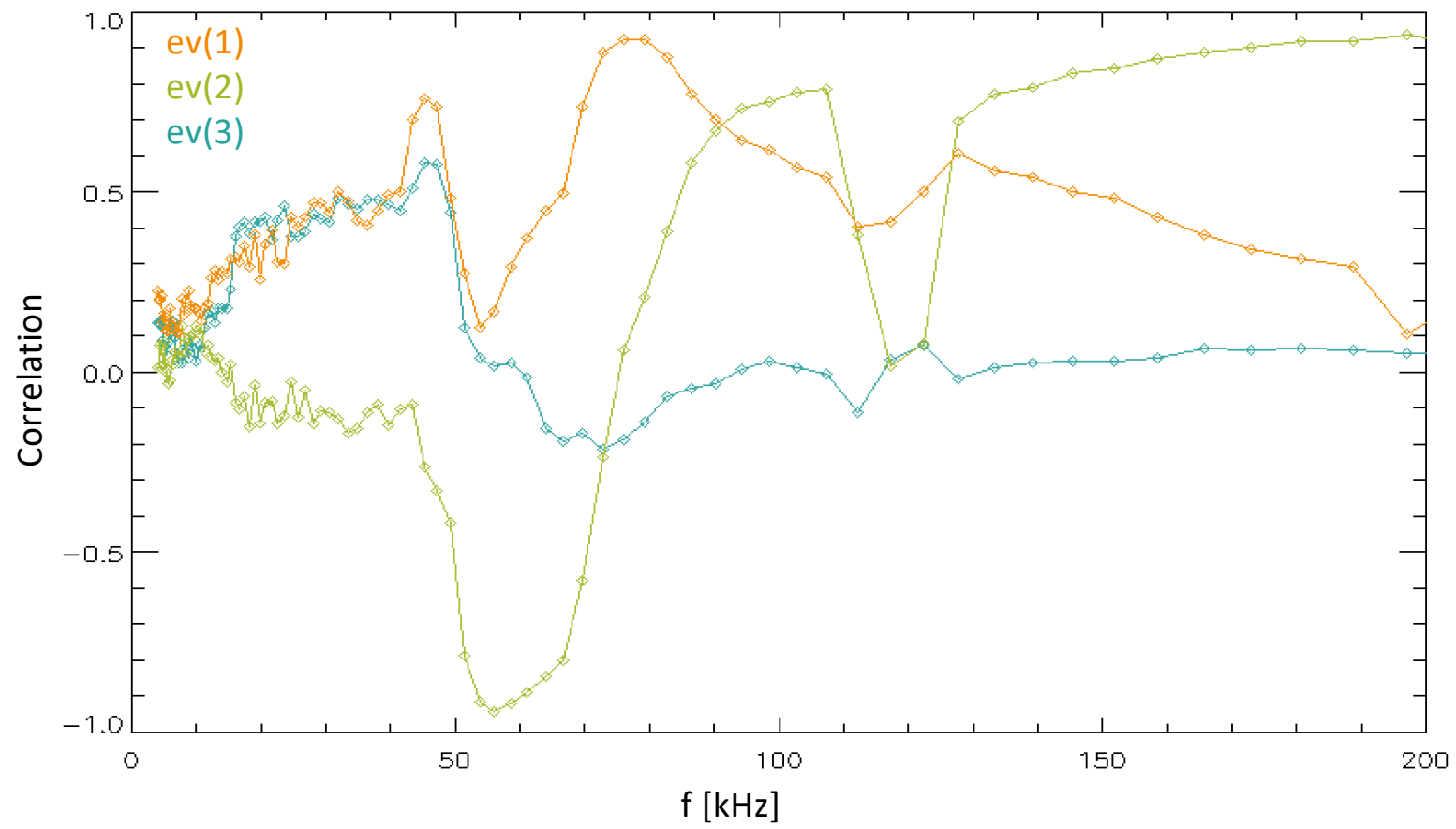
- Decomposition in Singular Value :

$$I_f(t) = \sum_i w_i v_i(f) u_i(t)$$

Standardized time series









# Conclusions

- Clearly work in progress
- There are many observational features I don't understand about Type III
- Links between LW and type III
  - Enhanced emission at  $2 \cdot f_{pe}$  when LW is present is possible -> still TBC
  - Can the bursty LW behavior can be identify in EM emission ? Actual or instrumental effect ?

