Acoustic injection 116Hz REFL table analysis

PEM meeting

2020/06/12

Takaaki Yokozawa
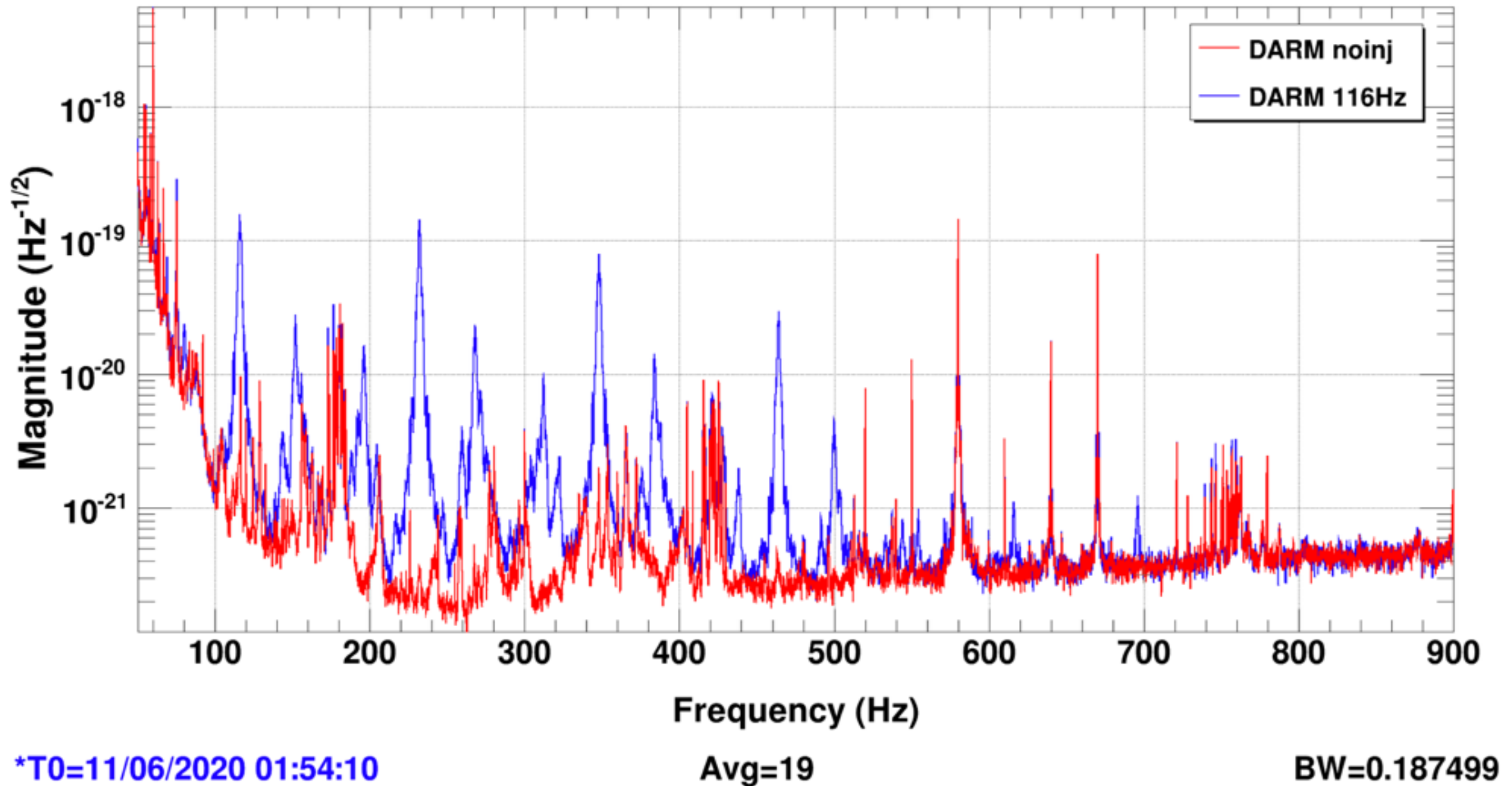
Acoustic injection to REFL table

PEM (Center)
takaaki.yokozawa - 06:19, Friday 12 June 2020 (14508)
Comment to Acoustic injection (RELF, PSL) (Click here to view original report: 14506)
6/11(Thu) 10:48 Silent 10:50 116Hz 100cnt 10:52 116Hz 200cnt 10:54 116Hz 300cnt 10:59 115Hz 300cnt 11:01 114Hz 300cnt 11:03 117Hz 300cnt 11:05 118Hz 300cnt 11:07 119Hz 300cnt

- We performed the acoustic injection to REFL table and PSL room
  - The detail will be described by Washimi-san
    - Swept sine injection
    - Amplitude linearity check
    - White noise injection
- I focused the 116Hz acoustic injection to REFL table
  - Large up/down frequency converted noise was detected
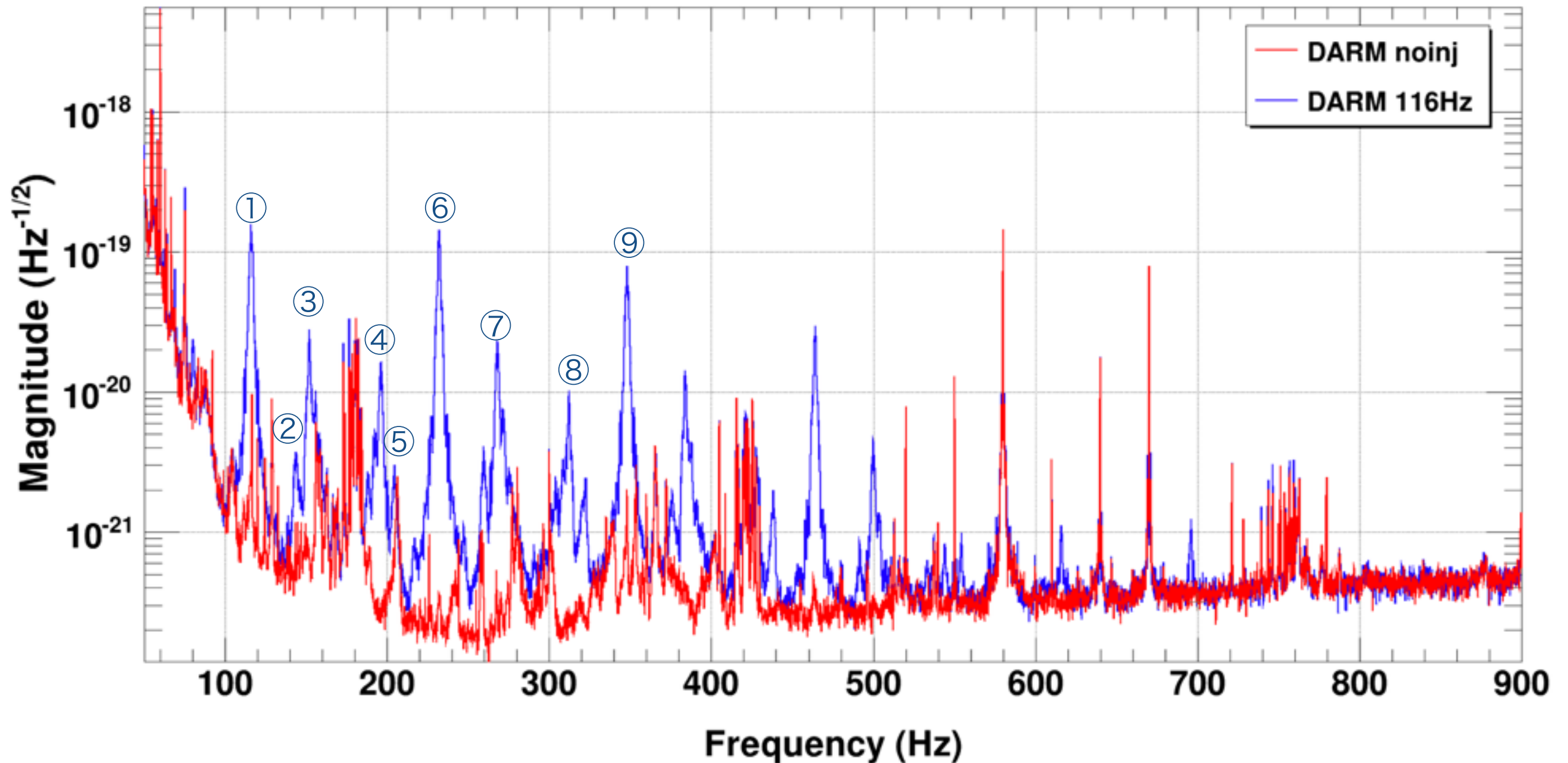
Acoustic injection to REFL table

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Acoustic injection to REFL table

Power spectrum

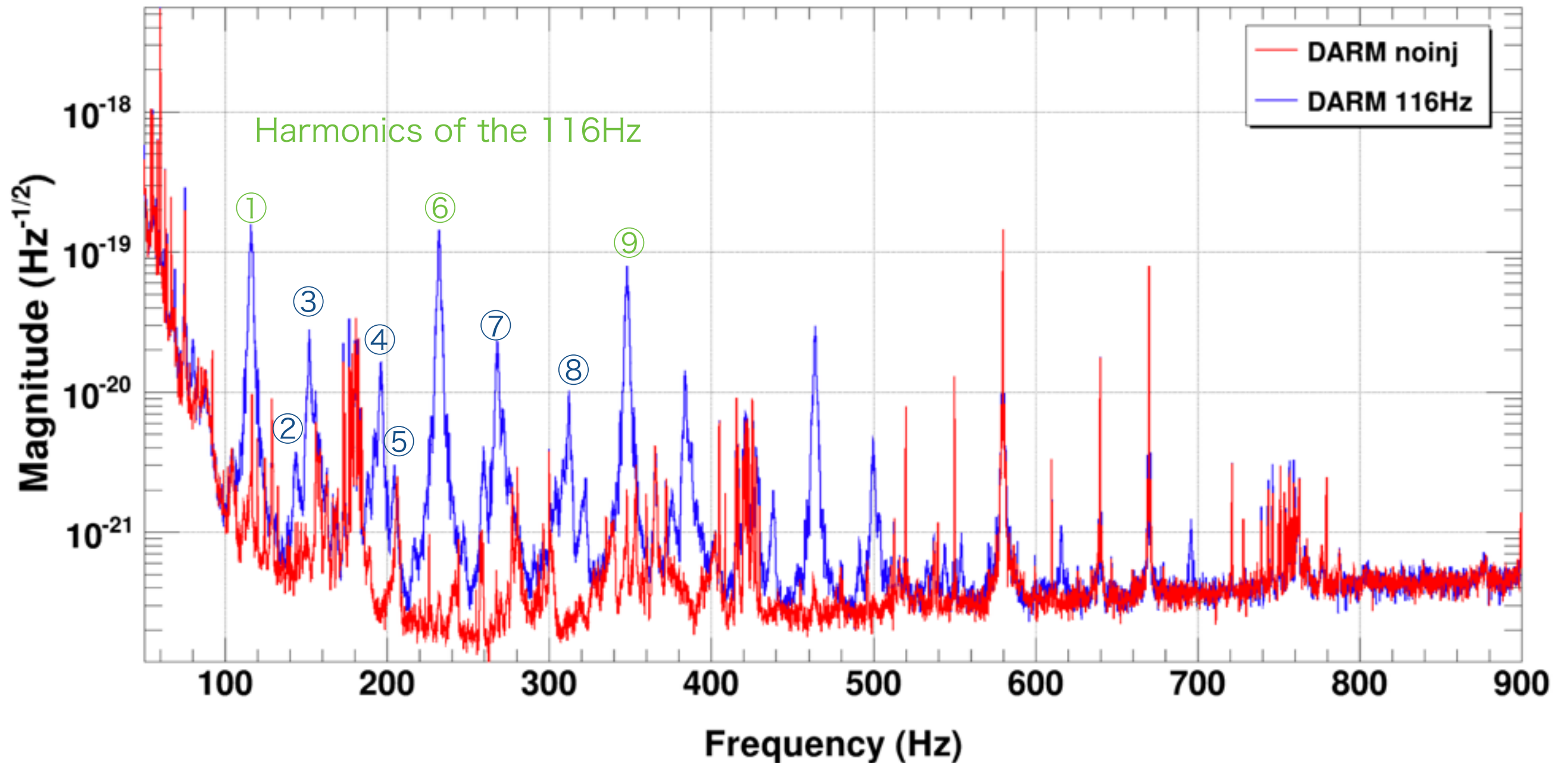*T0=11/06/2020 01:54:10   Avg=19   BW=0.187499

①116Hz ②144Hz ③152Hz (There are 156, 158Hz in noinj) ④188, 192, 196Hz

⑤204Hz (There are 206Hz in noinj) ⑥232Hz ⑦259.5, 268, 271, 275Hz ⑧312, 322Hz

⑨348Hz

4

Acoustic injection to REFL table

Power spectrum

Harmonics of the 116Hz

Legend: DARM noinj (red), DARM 116Hz (blue)

Axis labels: Magnitude (Hz$^{-1/2}$) vs Frequency (Hz)

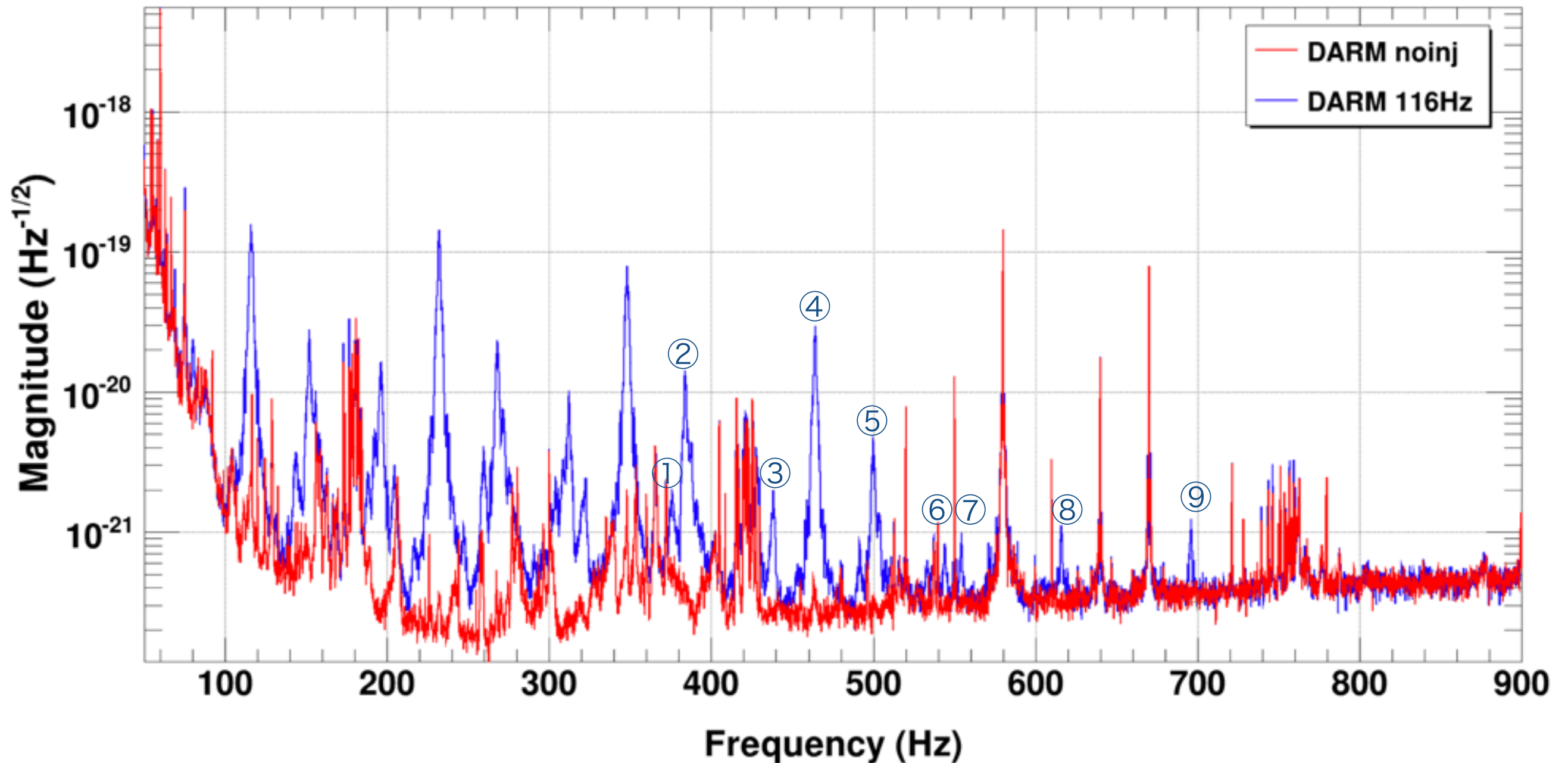*T0=11/06/2020 01:54:10   Avg=19   BW=0.187499

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Acoustic injection to REFL table

Power spectrum

Magnitude (Hz$^{-1/2}$) vs Frequency (Hz)

Legend:
- DARM noinj (red)
- DARM 116Hz (blue)

*T0=11/06/2020 01:54:10   Avg=19   BW=0.187499
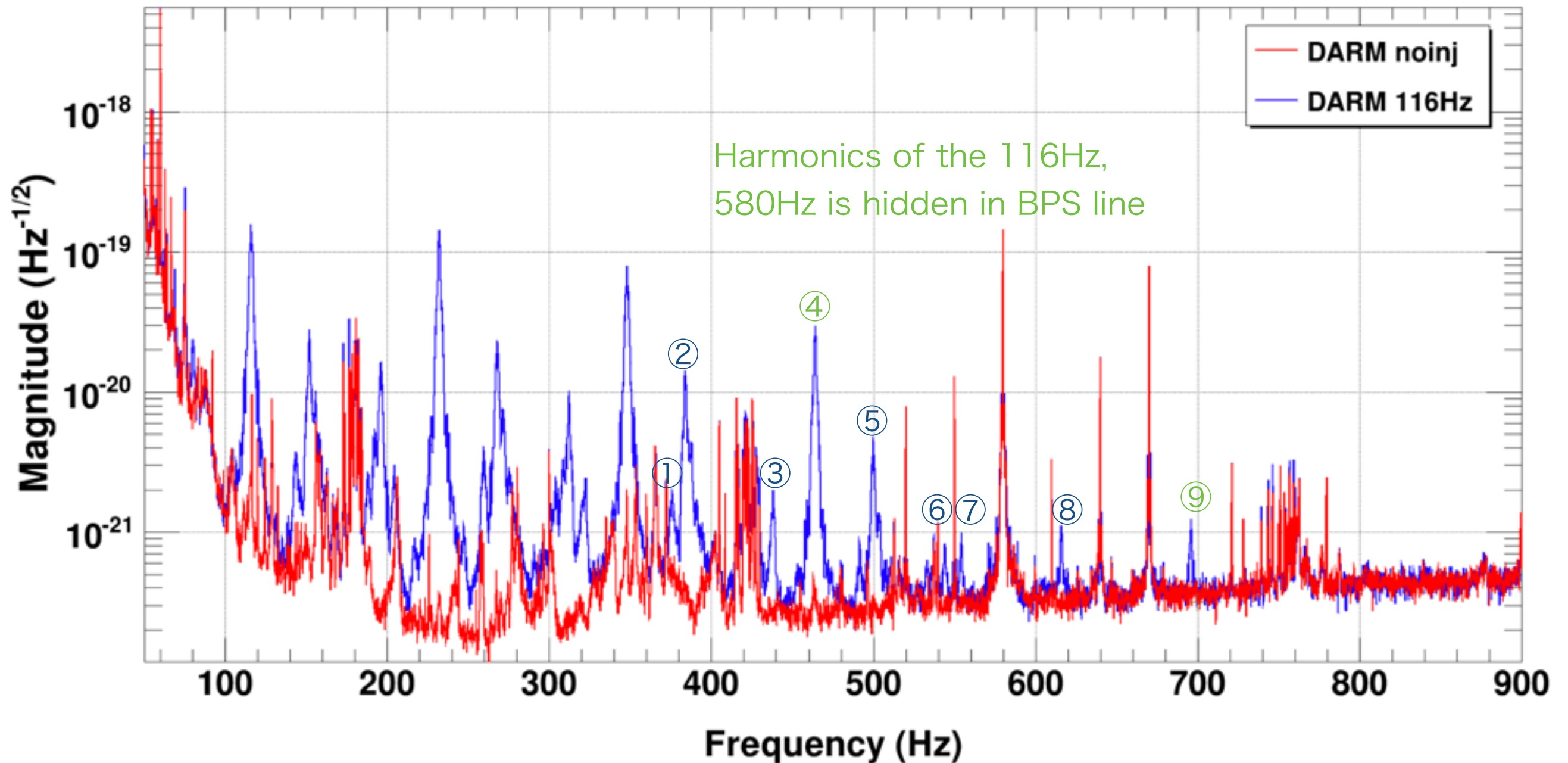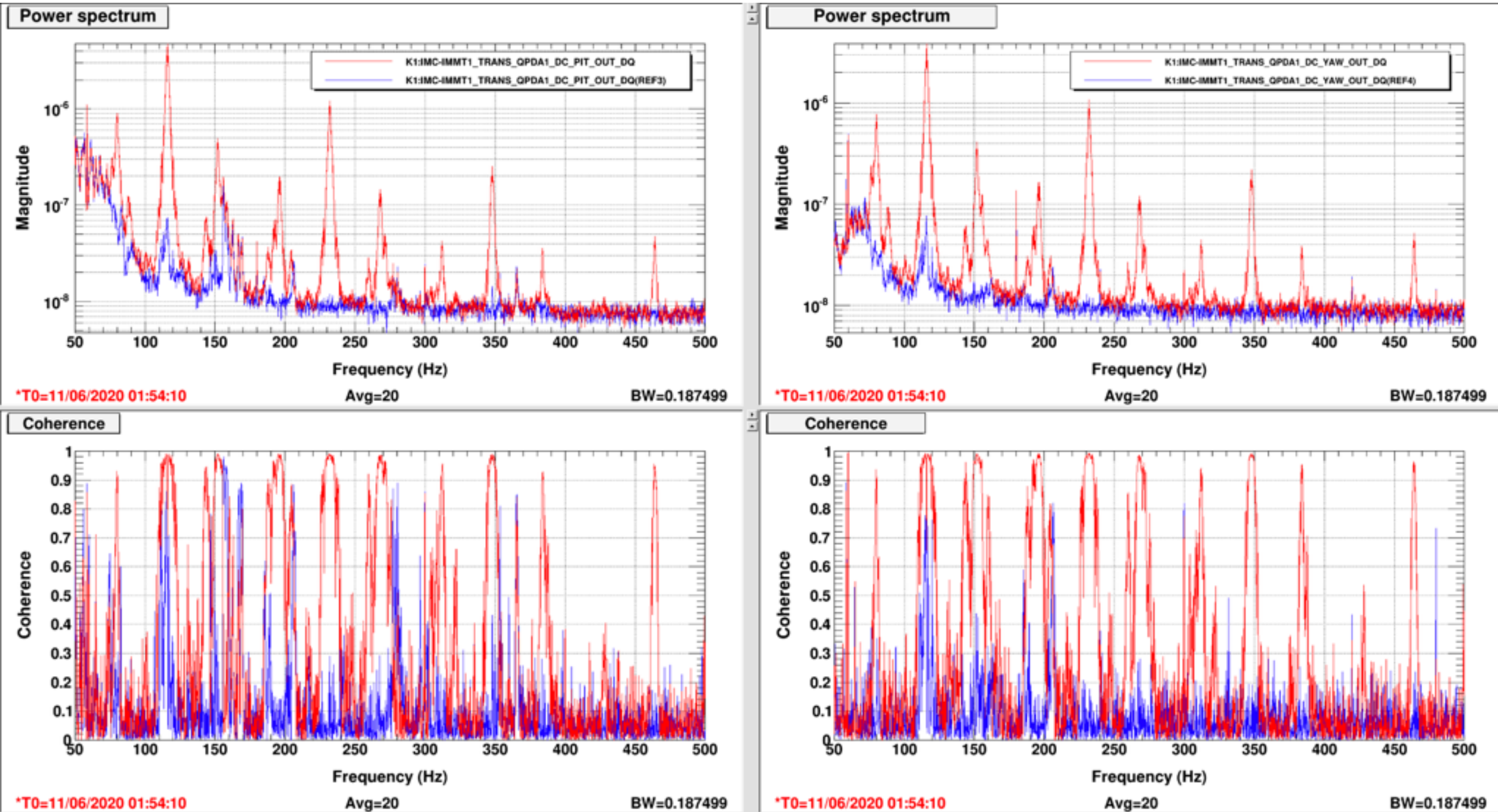
①376Hz ②384Hz ③438Hz ④464Hz ⑤491.5, 500, 503Hz ⑥544Hz ⑦554Hz
⑧616Hz ⑨696Hz

Acoustic injection to REFL table

Power spectrum

Harmonics of the 116Hz, 580Hz is hidden in BPS line

Legend: DARM noinj (red), DARM 116Hz (blue)

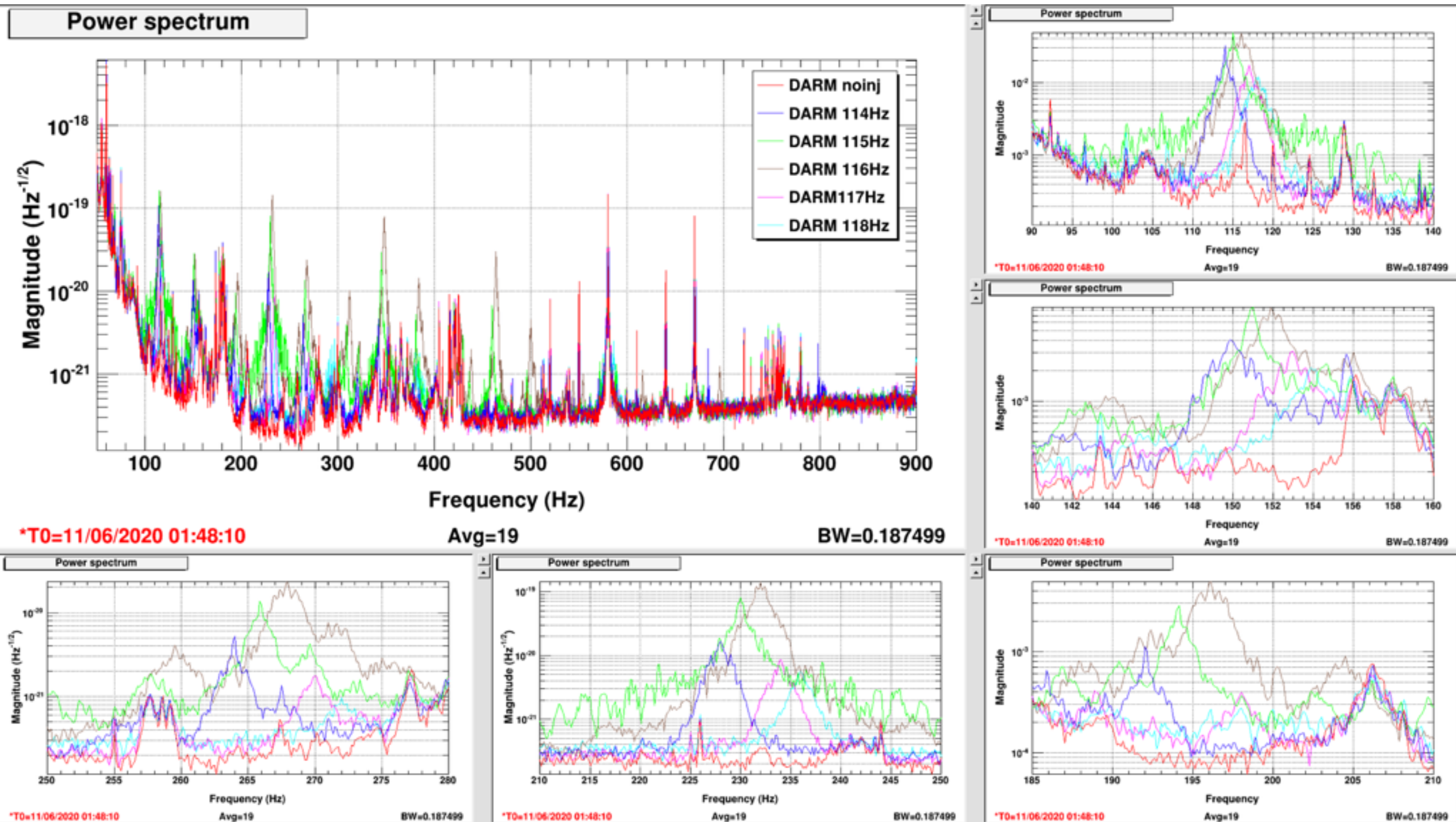*T0=11/06/2020 01:54:10   Avg=19   BW=0.187499

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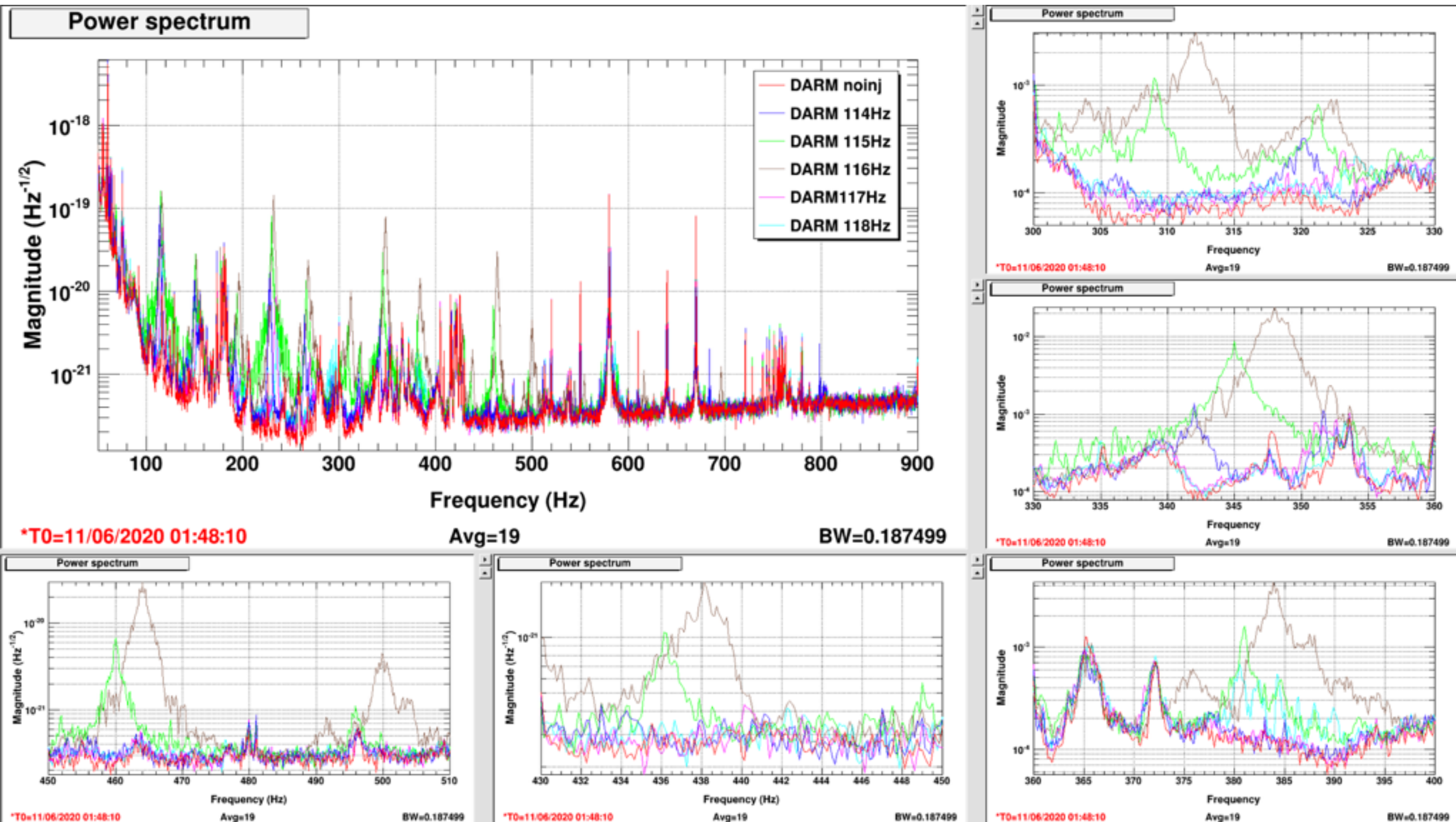⑧616Hz ⑨696Hz

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Homework this weekend

- Bruco analysis to 116Hz injection data
  - IMMT1 trans QPD P/Y have coherence
  - Check other PEM channels
  - Check suspension channels
- Frequency dependent analysis
  - Injection frequency dependence
  - Amplitude