

# Chorus-microburst repetition periods: FIREBIRD-II RBSP conjunctions

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# Hypothesis

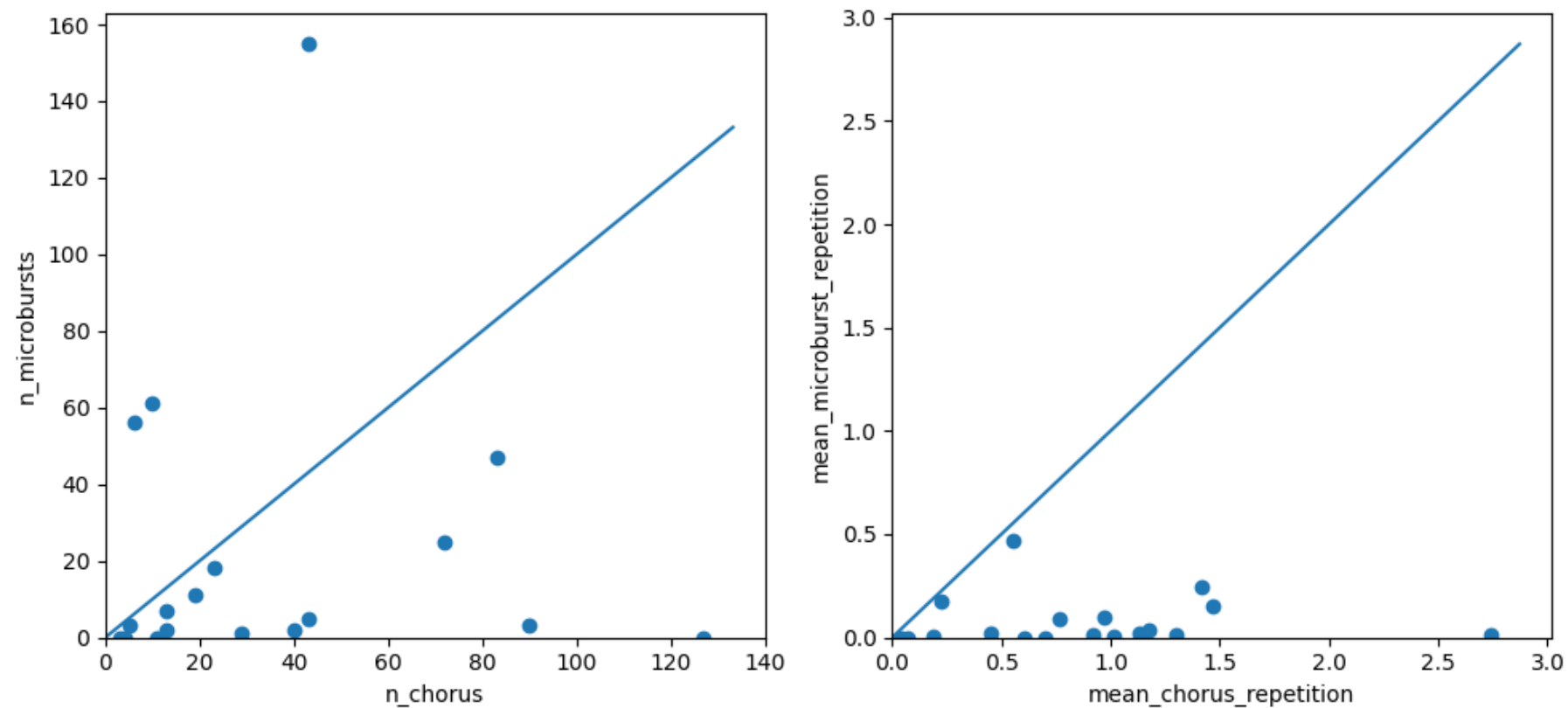
- If chorus waves cause microburst precipitation, then there should be a one-to-one relationship between their repetition periods.
- Realistically I don't expect this to be perfect:
  - Microburst and chorus wave detection codes are not perfect,
  - Hard (impossible?) to get perfect conjunctions

# Methodology

- Get the lists of conjunctions: <https://doi.org/10.5281/zenodo.7686037>
- Calculate the number of microbursts, and number of microbursts/s observed during conjunctions.
  - Microbursts detected via the burst parameter and visually unverified.
  - Certain times in the data contain many false-positives due to saturation.
  - Normalized by the HiRes time span within +/- 2 minutes before and after the conjunction (HiRes data is often only for 3-4 minutes).
- Calculate the number of chorus waves and normalize.
  - Used the dechirping algorithm used to identify lightning signals
  - Number of chorus waves within +/- 5 minutes before and after the conjunction.

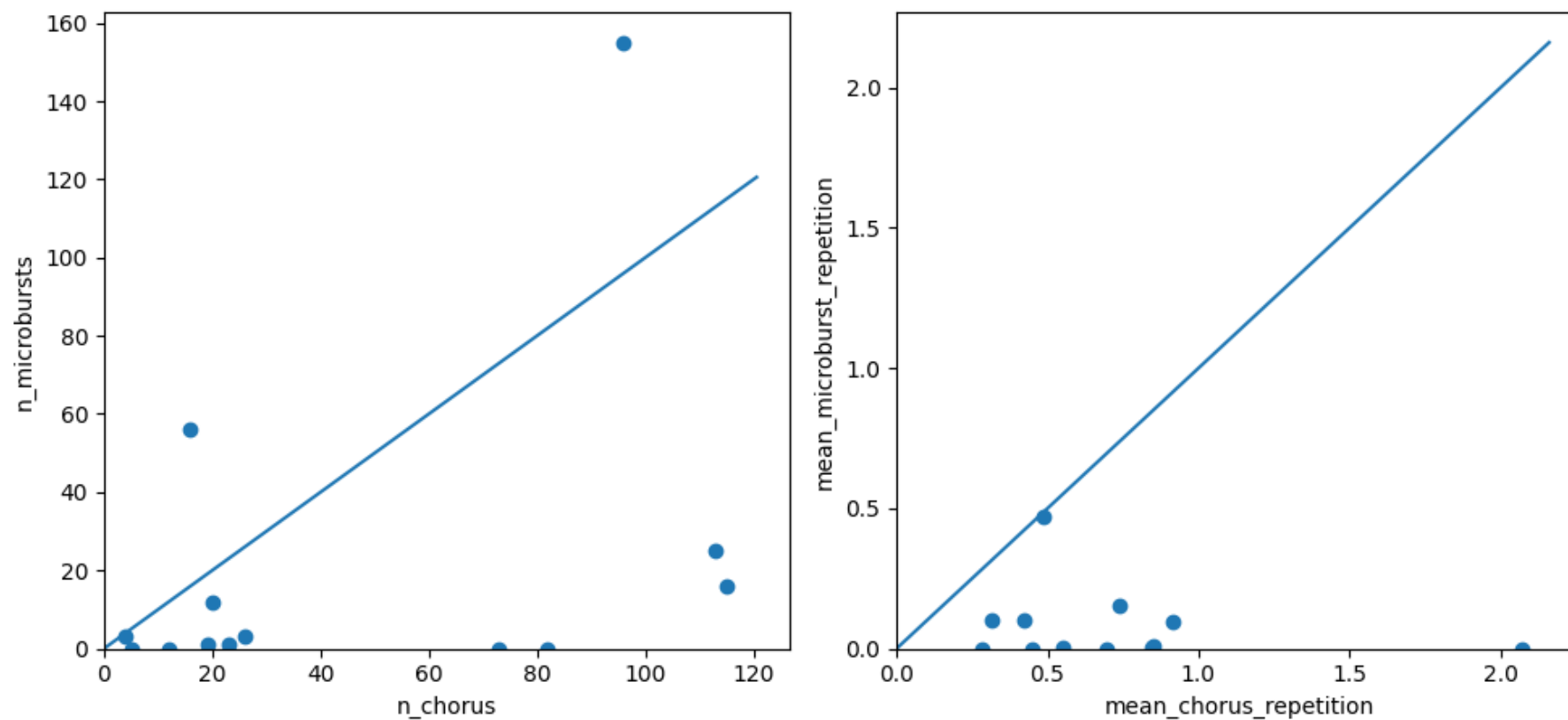
# FU3-RBSPA

Chorus-Microburst repetition rate | FU-3 | RBSP-A



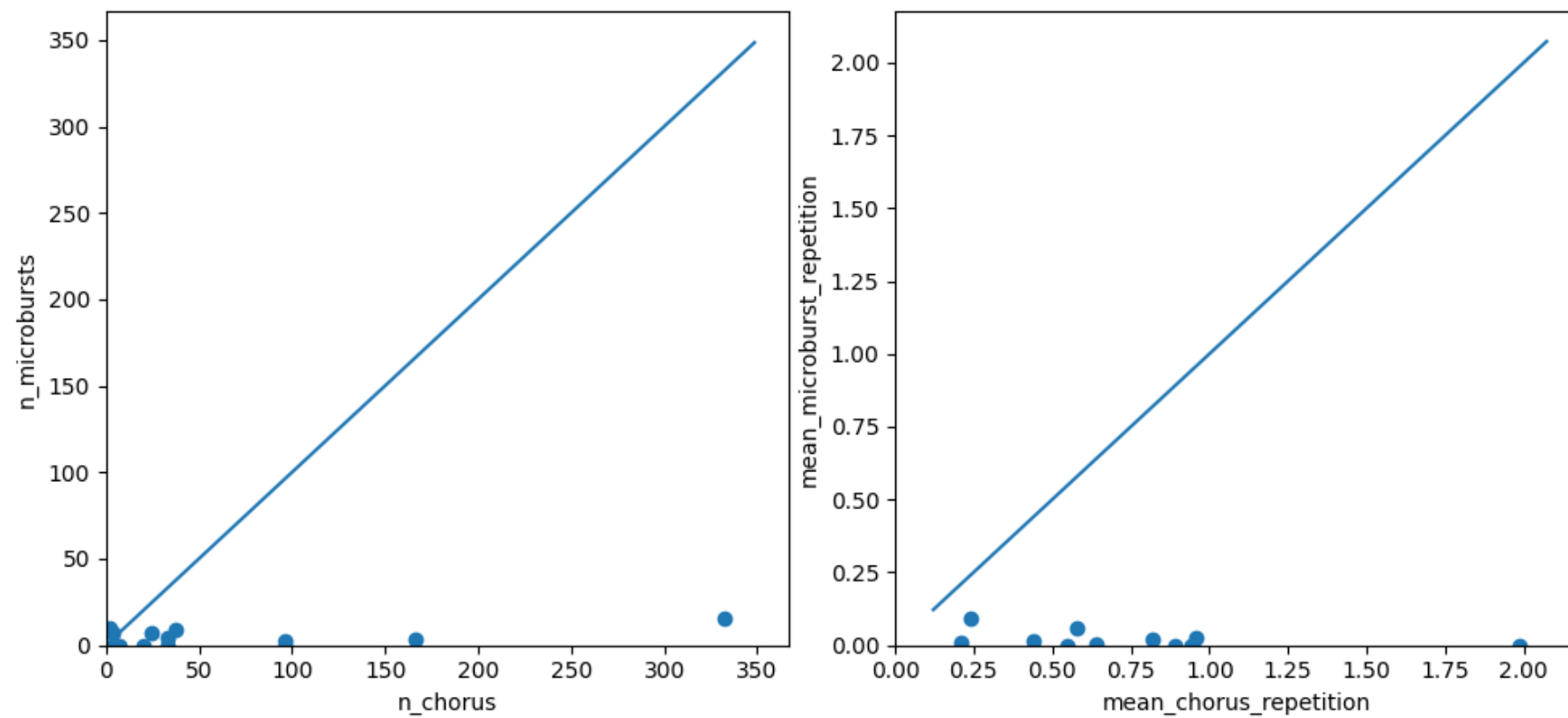
# FU3-RBSPB

Chorus-Microburst repetition rate | FU-3 | RBSP-B



# FU4-RBSPA

Chorus-Microburst repetition rate | FU-4 | RBSP-A



# FU4-RBSPB

Chorus-Microburst repetition rate | FU-4 | RBSP-B

