SAKURA Meeting
October 28, 2016

Current status of

Including high-time-resolution DAM data to Tohoku Univ. data and meta-data server

A. Kumamoto

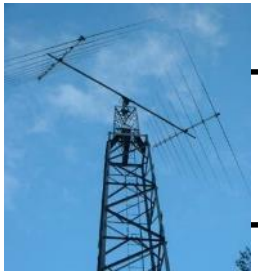
1. Ground-based observations at Tohoku U. Observatory

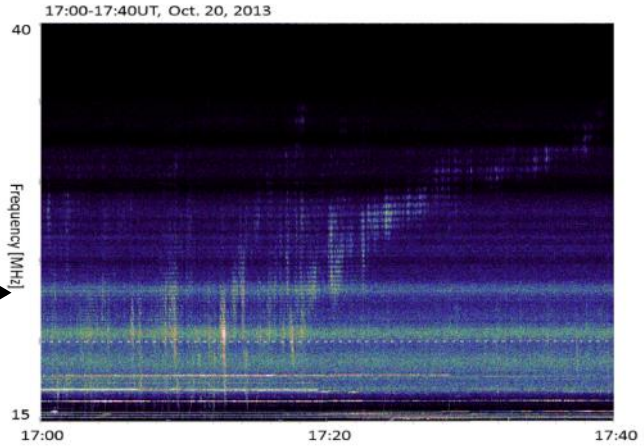
Iitate Continuous HF radio wave monitor

Location (140.40E, 37.42N)

http://ariel.gp.tohoku.ac.jp/~jupiter/it_hf/cdf/

Polarization	R&L
Interval	0.5 s
BW	10kHz
Step #	700
F range	15–40 MHz
Sensitivity	$-200 dBWm^{-2}Hz^{-1}$
Precision	12 bit
Data Rate	470MB/day
Format	CDF





Vertex Early Arc of Io-B DAM

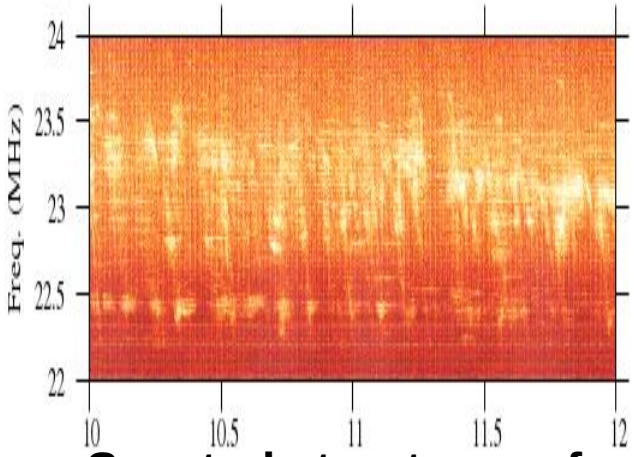
Iitate High-time-resolution Receiver

Location (140.40E, 37.42N)

Log-periodic Antenna

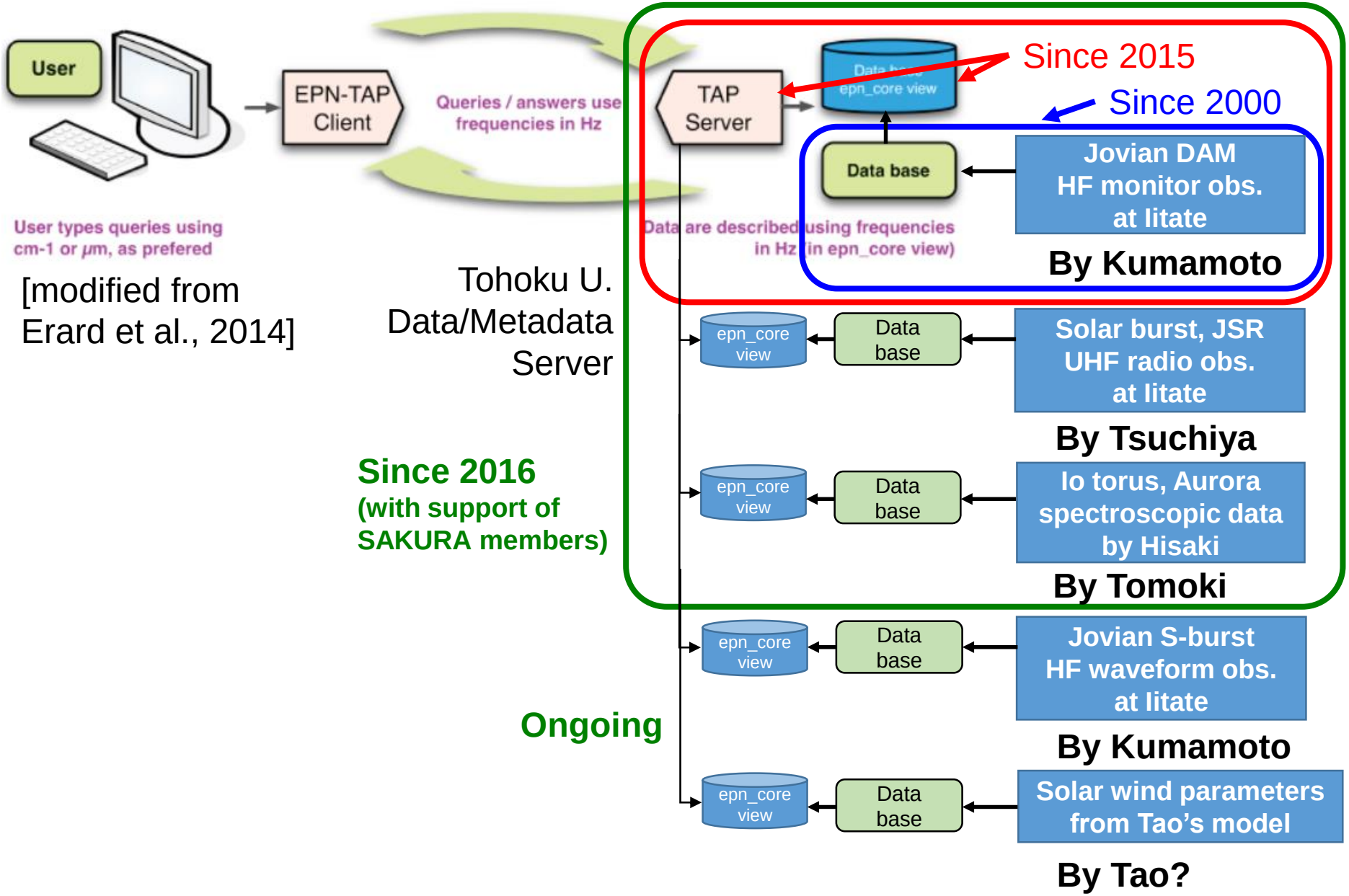
Wave form Receiver (40 MSPS)

Polarization	R
Interval	0.8 ms
BW	1.2 kHz
Step #	16384
F range	20–40 MHz
Sensitivity	$-200\mathrm{dBWm^{-2}Hz^{-1}}$
Precision	12 bit
Data Rate	0.3 TB/hour
Format	Binary



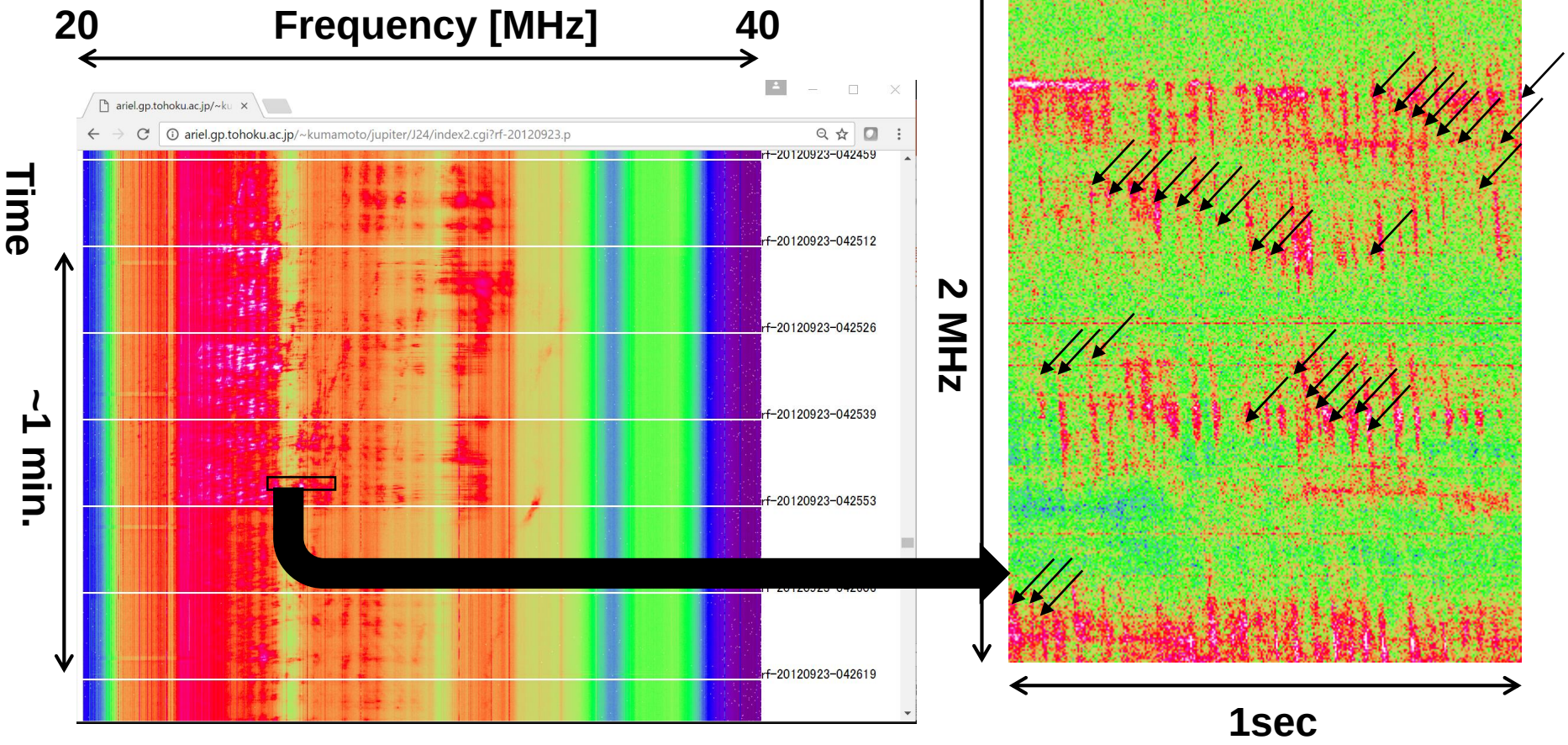
Spectral structures of S-burst elements

Data/Metadata Server at Tohoku Univ. for VO



[modified from Erard et al., 2014]

How to obtain repetition frequency



Selection of emission counting area in the spectrogram

Data is too huge to count up all emissions in the data. So we select several sample areas in one series of S-burst events.

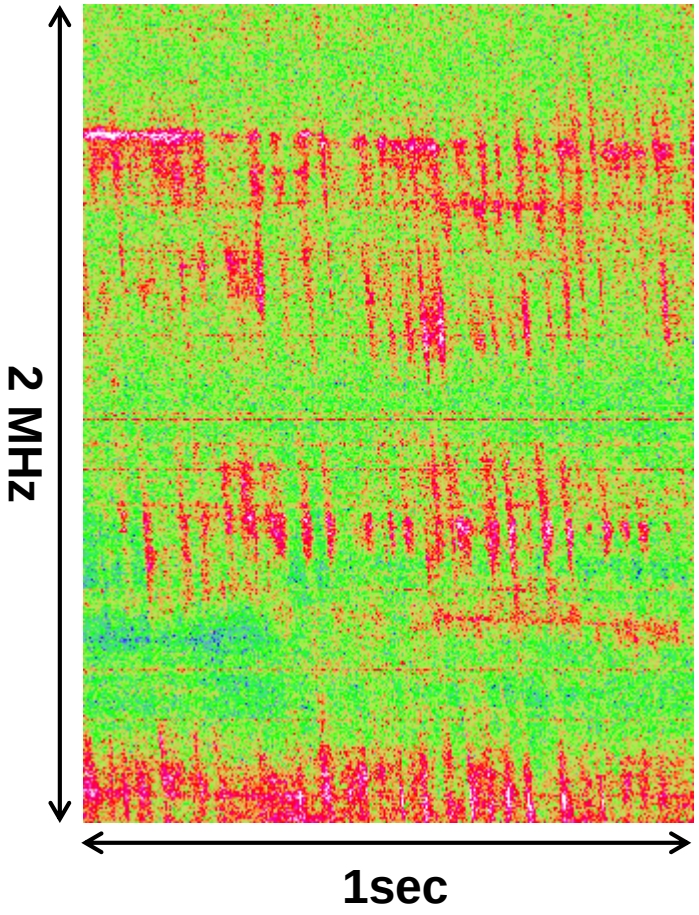
Emission Counting area (Example)

19:26:04UT, Sep. 22, 2012

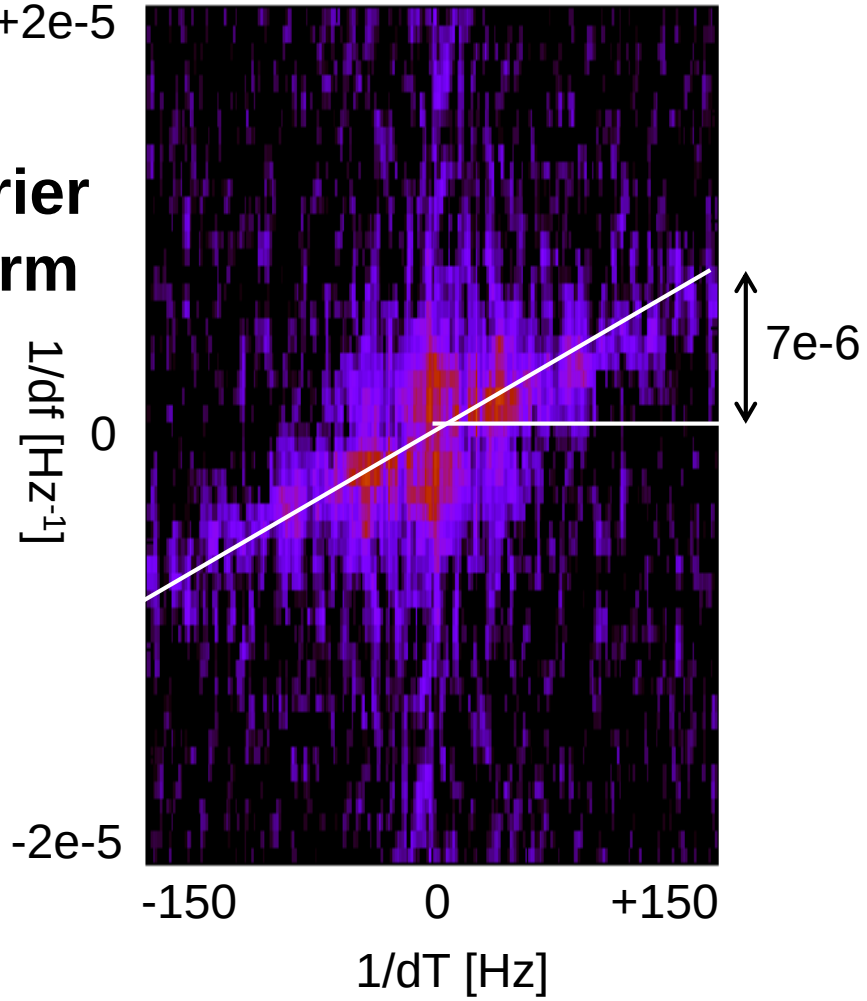
32 emissions / 1sec

➔ ω_n = 32 Hz

How to obtain drift rate



2D-Fourier Transform



→21.4 MHz/s

Planning Tool of Juno Ground Support

http://maser.lesia.obspm.fr/outils-services/juno-ground-radio/juno-decametric-observations.html

Web tool for S-burst Display

http://ariel.gp.tohoku.ac.jp/~kumamoto/jupiter/J24/index.cgi