









On the design of Wideband Sub-mm Wave Superconducting Integrated Filterbank Spectrometers

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Universe from an instrument on-chip







to the intended one

outside the band

Unit cell

350 400 450 250 350 400 200 450 500 Frequency [GHz] Frequency [GHz]

Octave band microstrip THz filterbank



• Number of spectral channels: 347

DESHIMA 2.0

Constant spectral Resolution: $R \simeq 400$

Enabled by:

- H-shaped microstrip resonators
- Low-loss a-Si
- Efficient analytical model simulations