Lab. of Integrated Circuits and Systems, **Tsinghua University**

A Multi-Mode Reconfigurable Analog Baseband with I/Q Calibration for GNSS Receivers

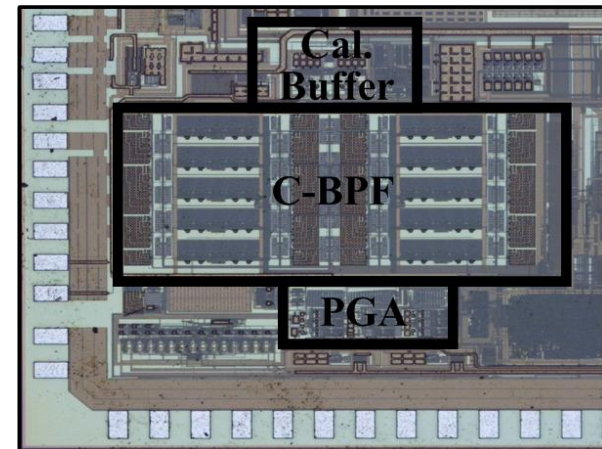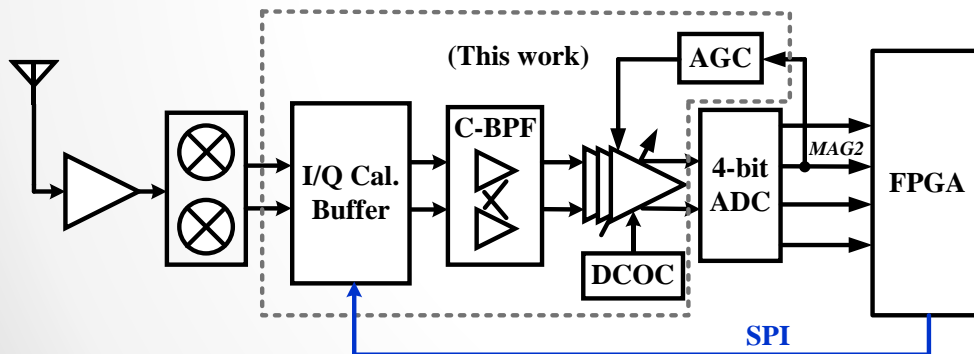**Zheng Song,**

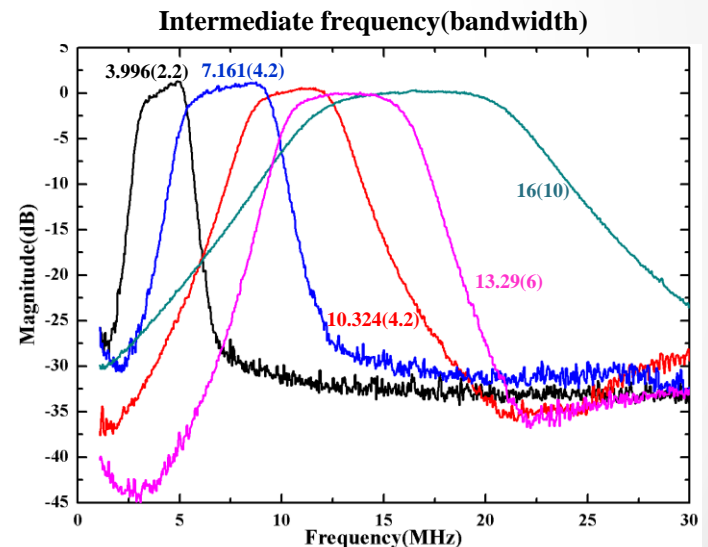**Nan Qi, Baoyong Chi, and Zhihua Wang**
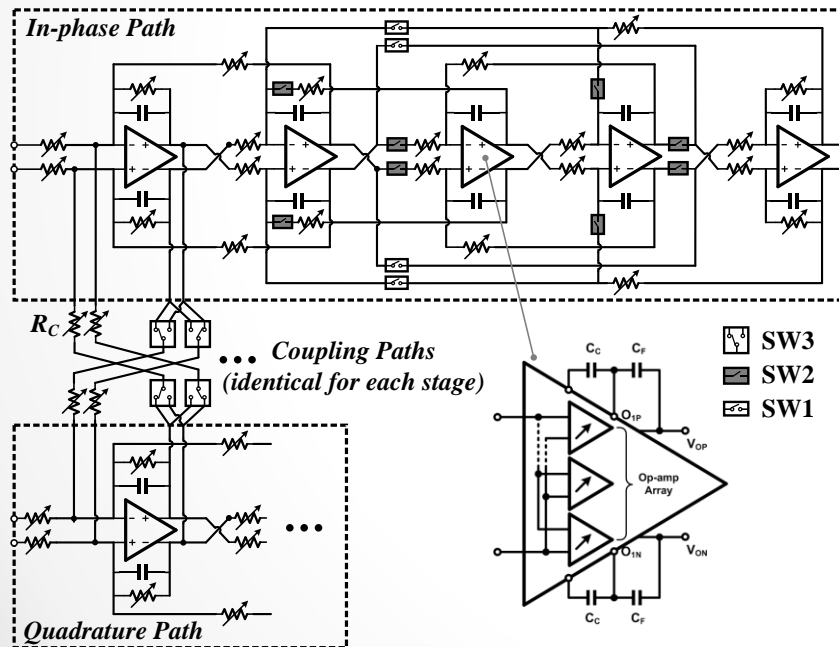
2014/1/8

Architecture

- **Complex band-pass filter (C-BPF)**

- **PGA and AGC Loop**

- **I/Q calibration**

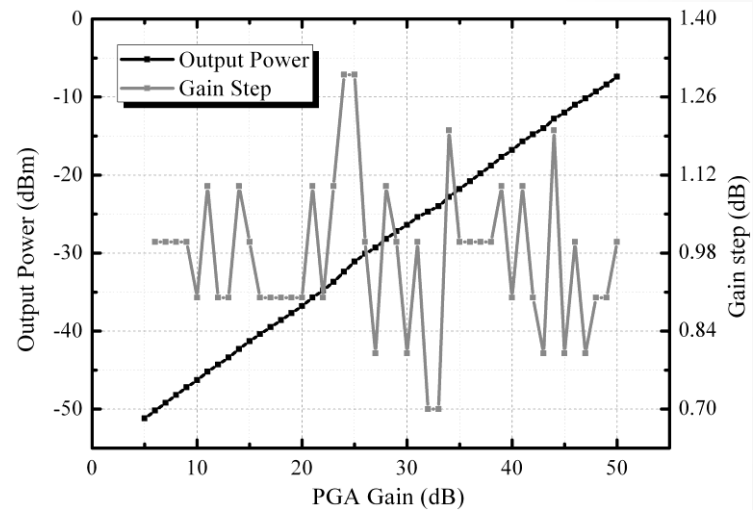# Complex band-pass filter

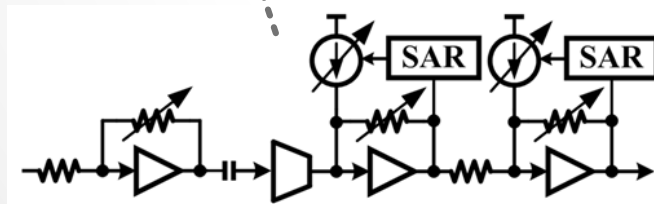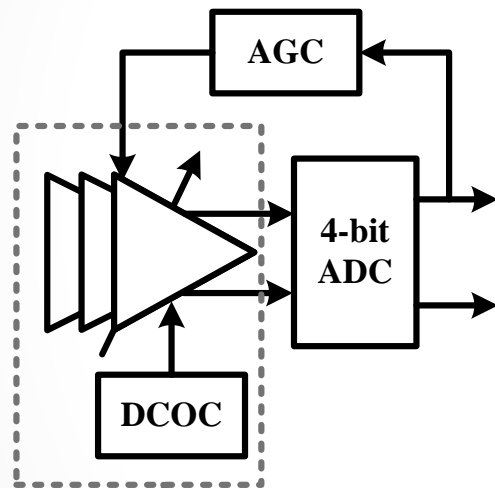- ## Reconfigurable C-BPF
  - Low-IF/zero-IF
  - 5th order bandpass/3rd order lowpass filter
  - Power-scalable

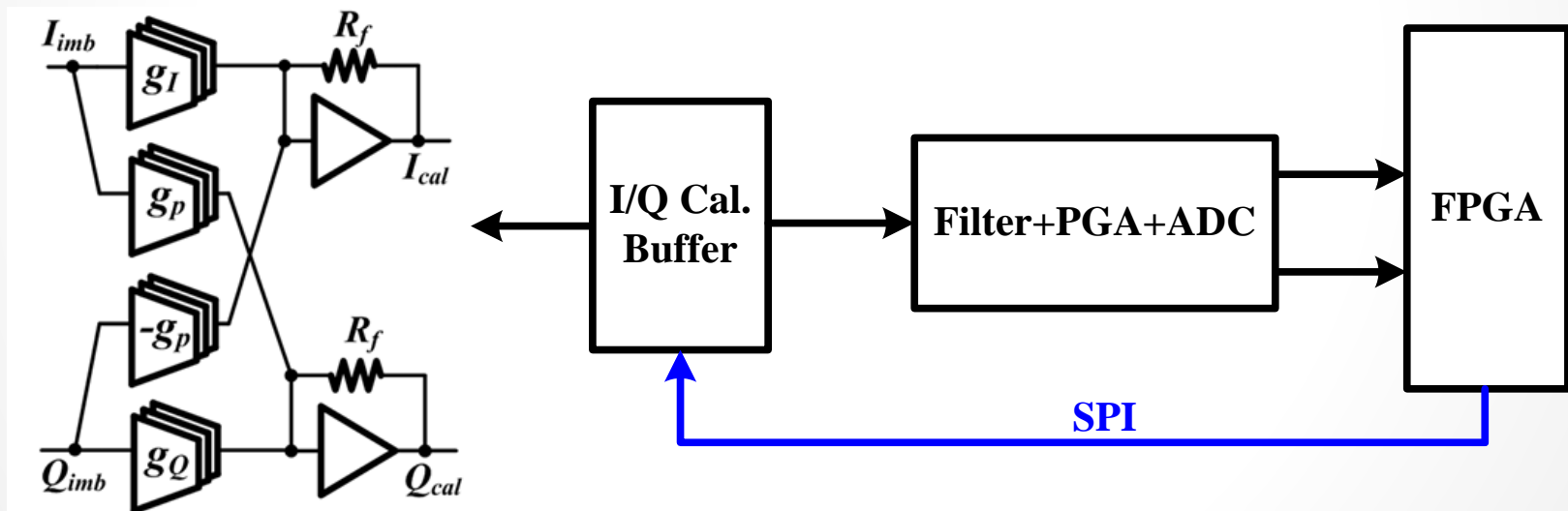# PGA and AGC Loop

- ## PGA&AGC

  - 5-50dB/ 1dB step
  - auto gain-control

I/Q calibration

- ## I/Q calibration
  - 5-50dB/ 1dB step
  - auto gain-control

I/Q calibration

- ## I/Q calibration

  - Improve IRR of Complex-BPF
  - auto I/Q calibration