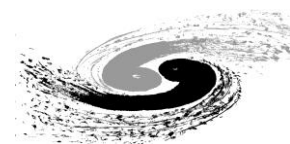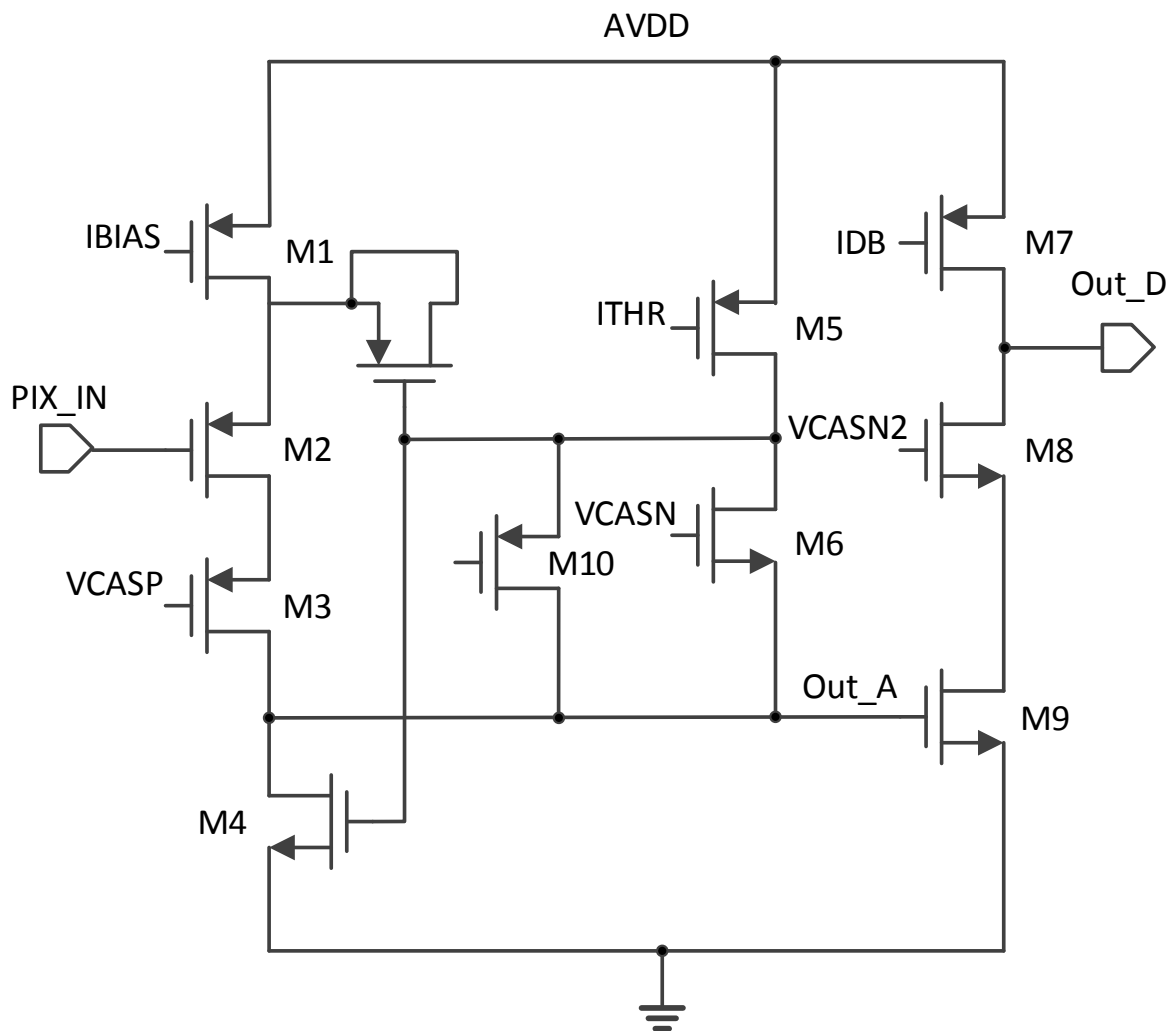# **Analog front-end design**

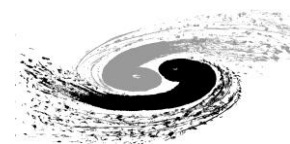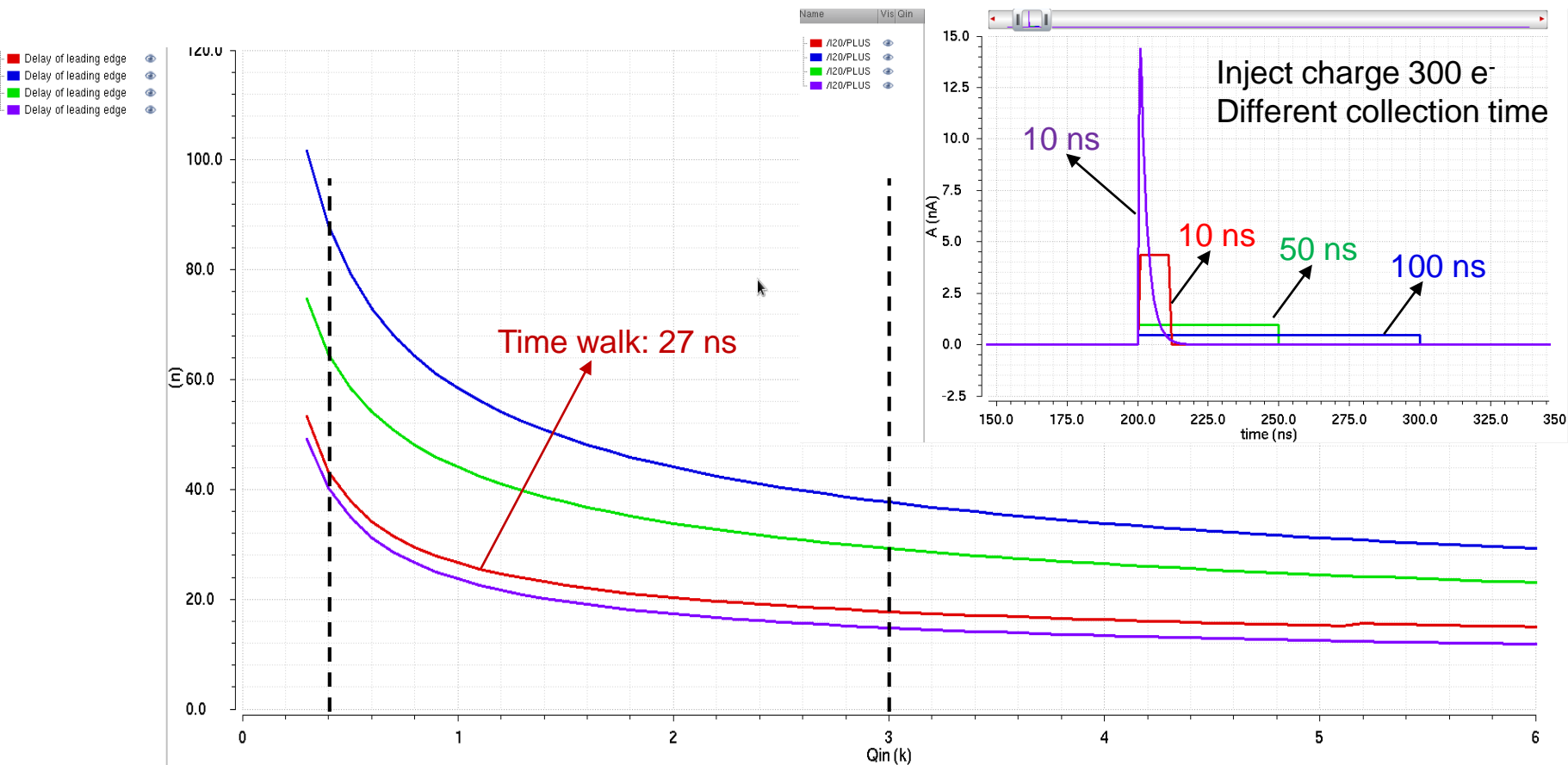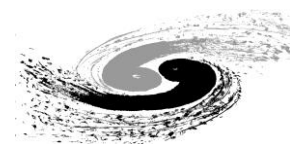Ying ZHANG

2018-10-29

Front-end design

Front-end simulation

Simulation condition: Cd = 2.5 fF, IBIAS = 440 nA

Delay of leading edge vs. input charge vs. charge collection time

Inject charge 300 e⁻
Different collection time

10 ns

10 ns   50 ns   100 ns

Time walk: 27 ns

Time walk increases with collection time

Front-end simulation

Simulation condition: Cd = 2.5 fF, 5 fF, 7 fF, IBIAS = 440 nA

Delay of leading edge vs. input charge vs. detector capacitance