

復旦大學

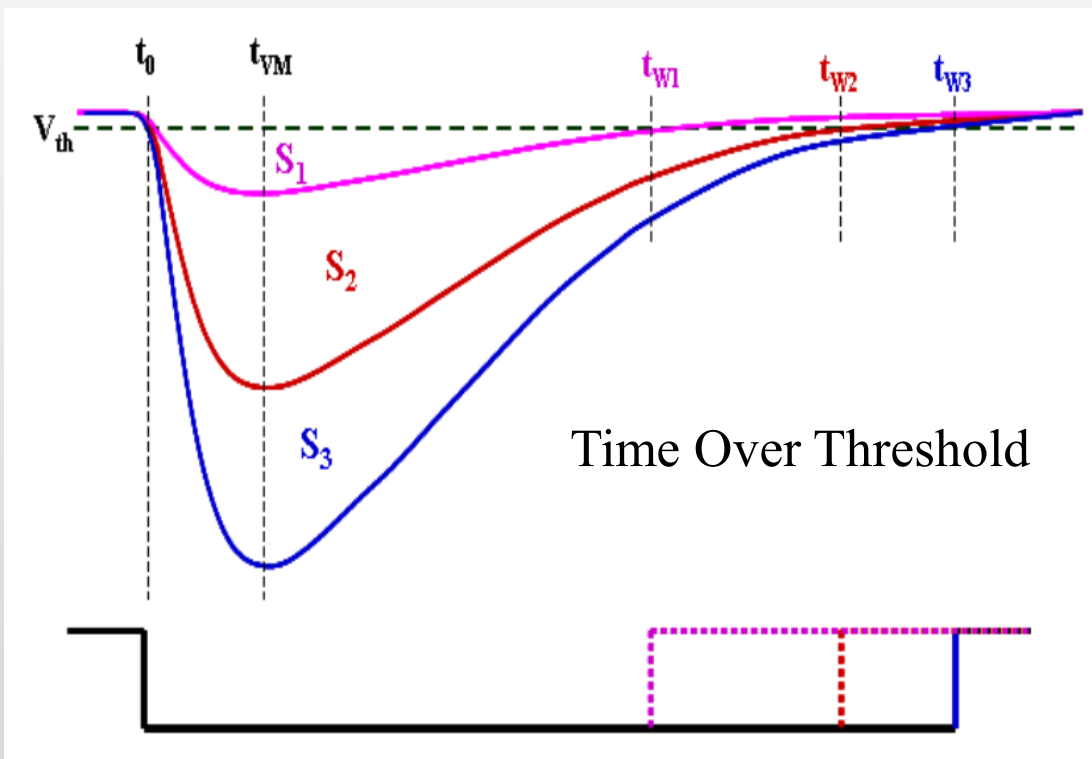
CEPC 缪子探测器前端电子学

2024/7/29

王曦阳

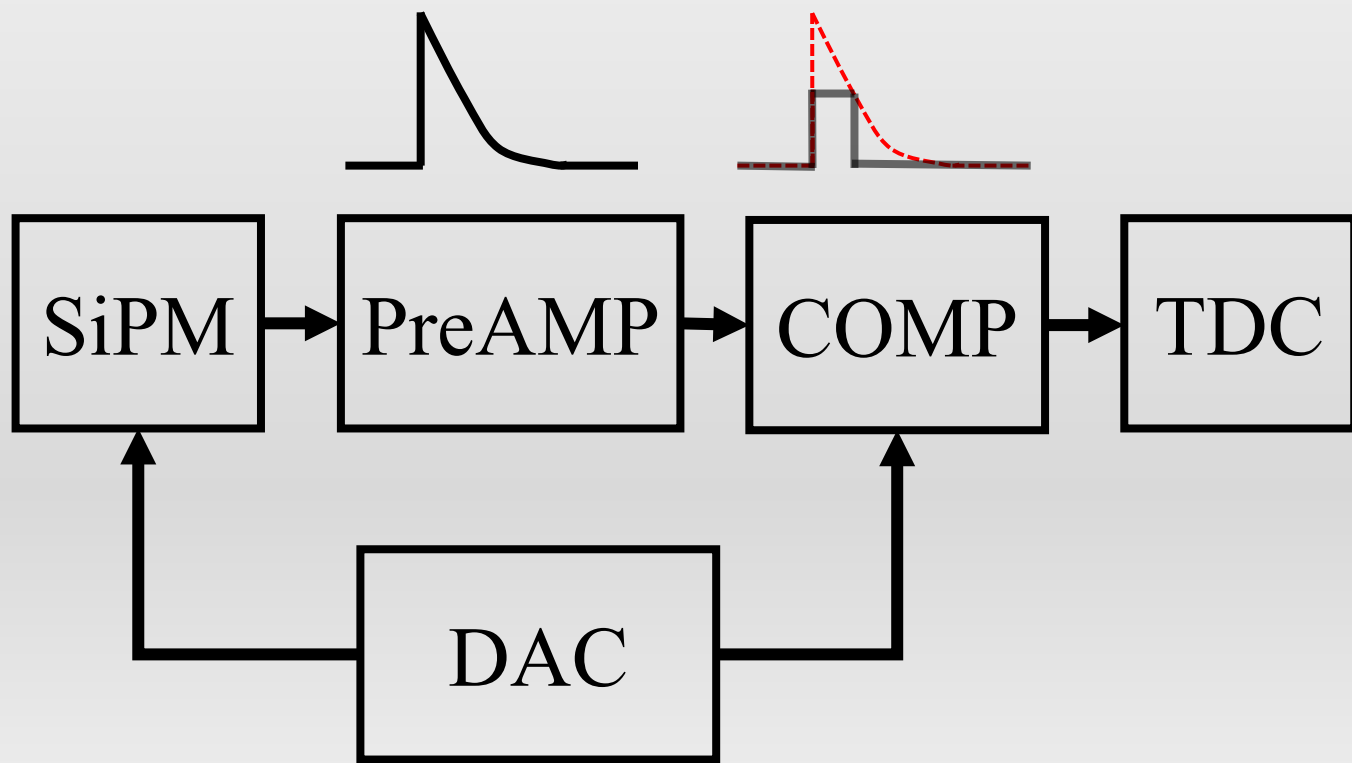


TOT方法用于定时



TOT原理示意图

TOT的实现：运算放大器+高速比较器+TDC
前端集成DAC调节阈值与SiPM偏压



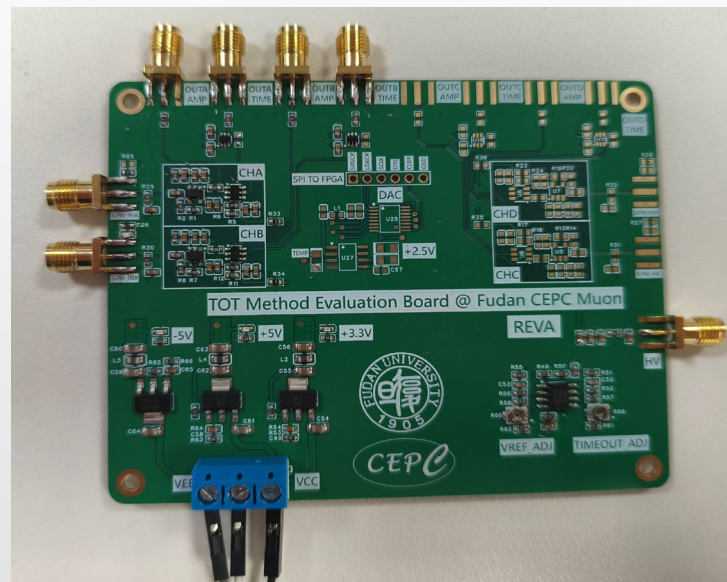


TOT方法评估板

OUT-TIME&OUT-AMP



8CH DAC AD5628
4CH For HV_ADJ
4CH For TH_ADJ



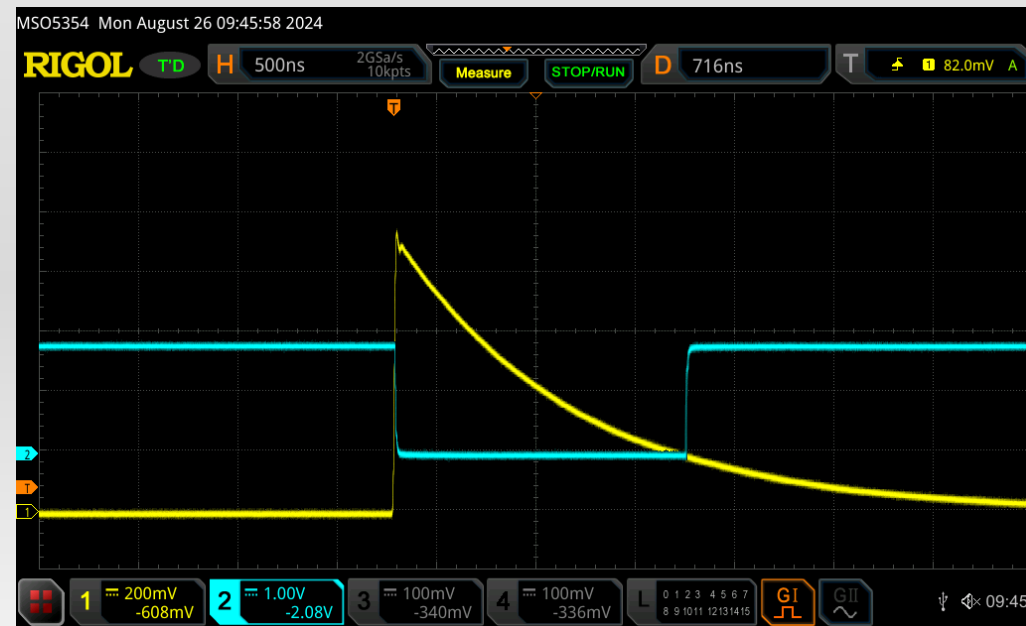
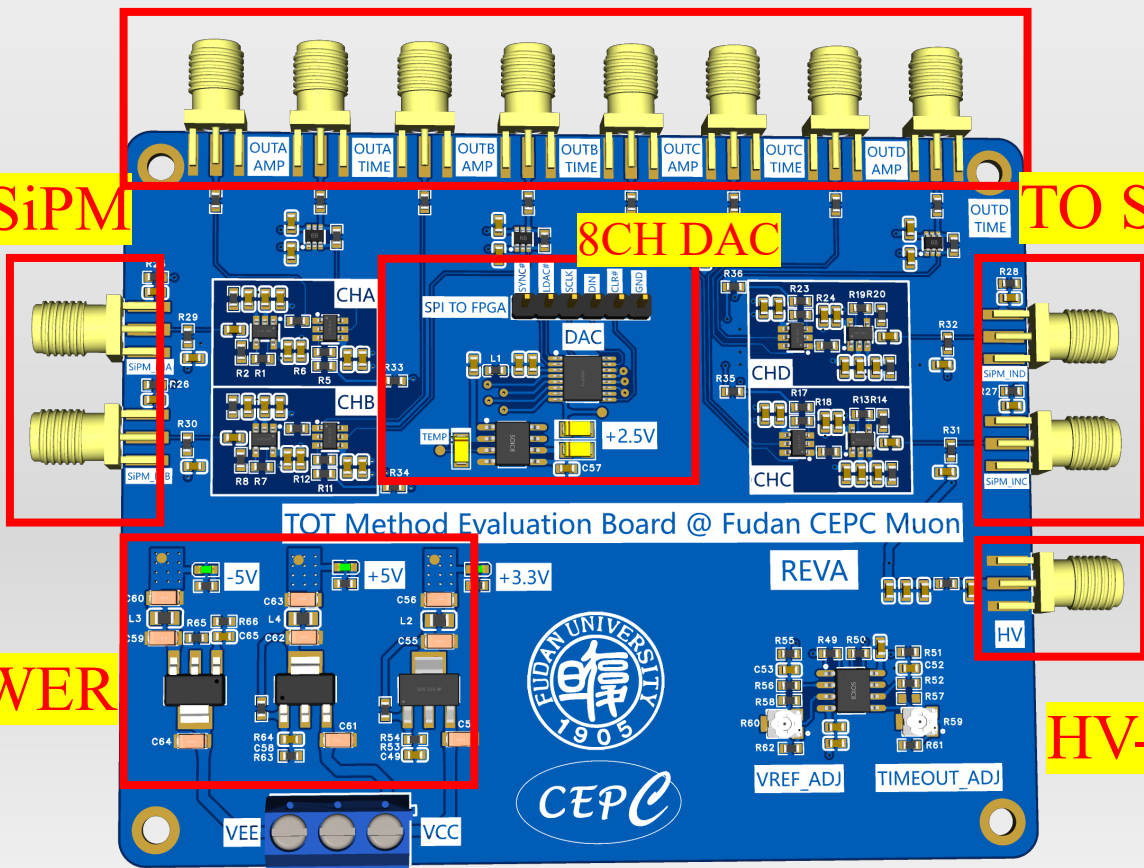
TO SiPM

TO SiPM

8CH DAC

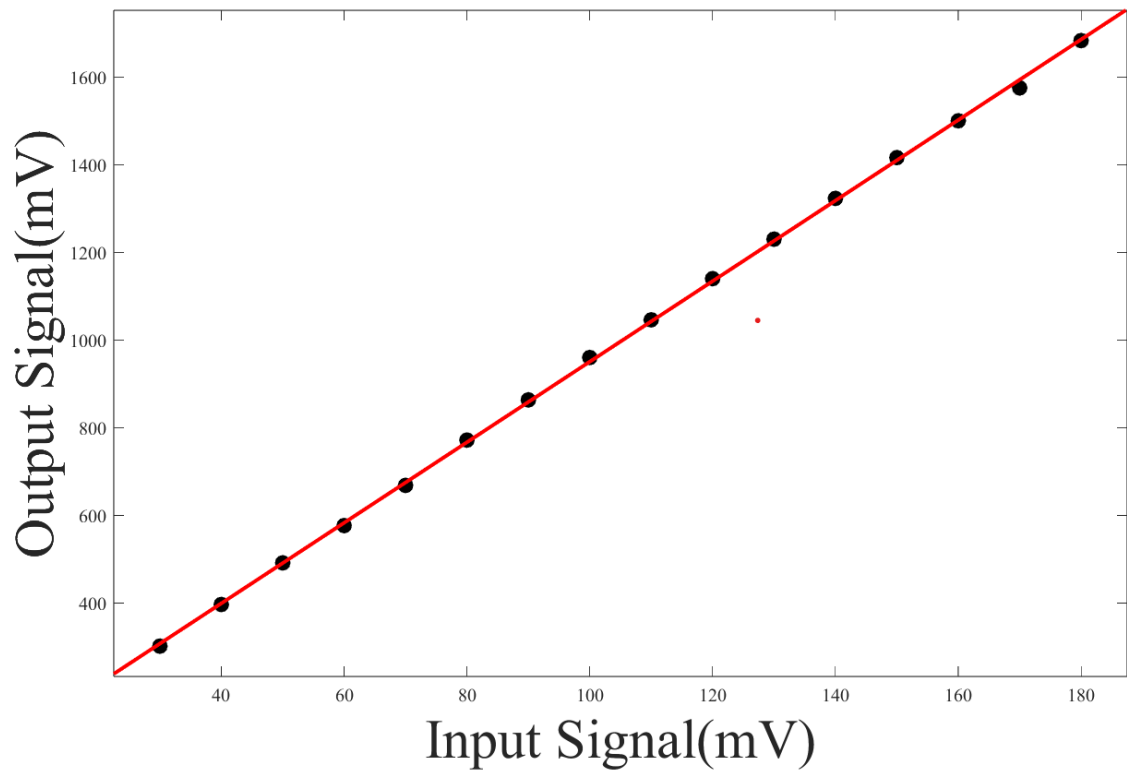
POWER

HV-SiPM

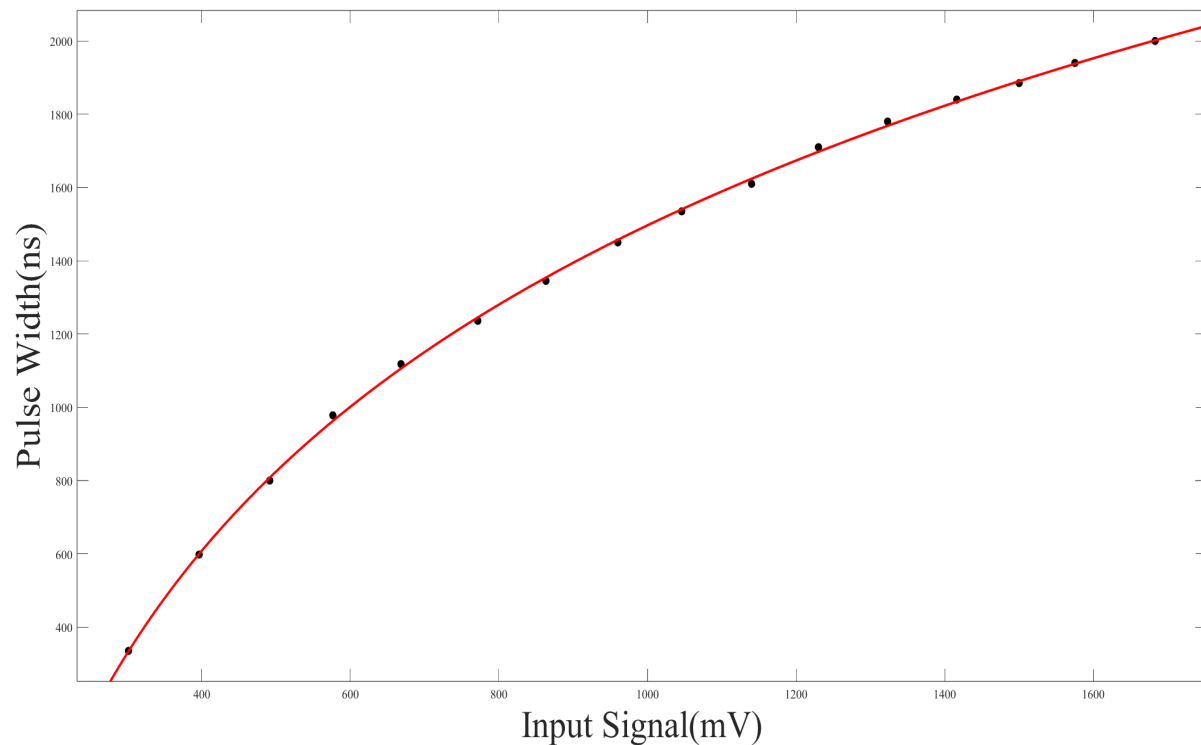




输出信号测试



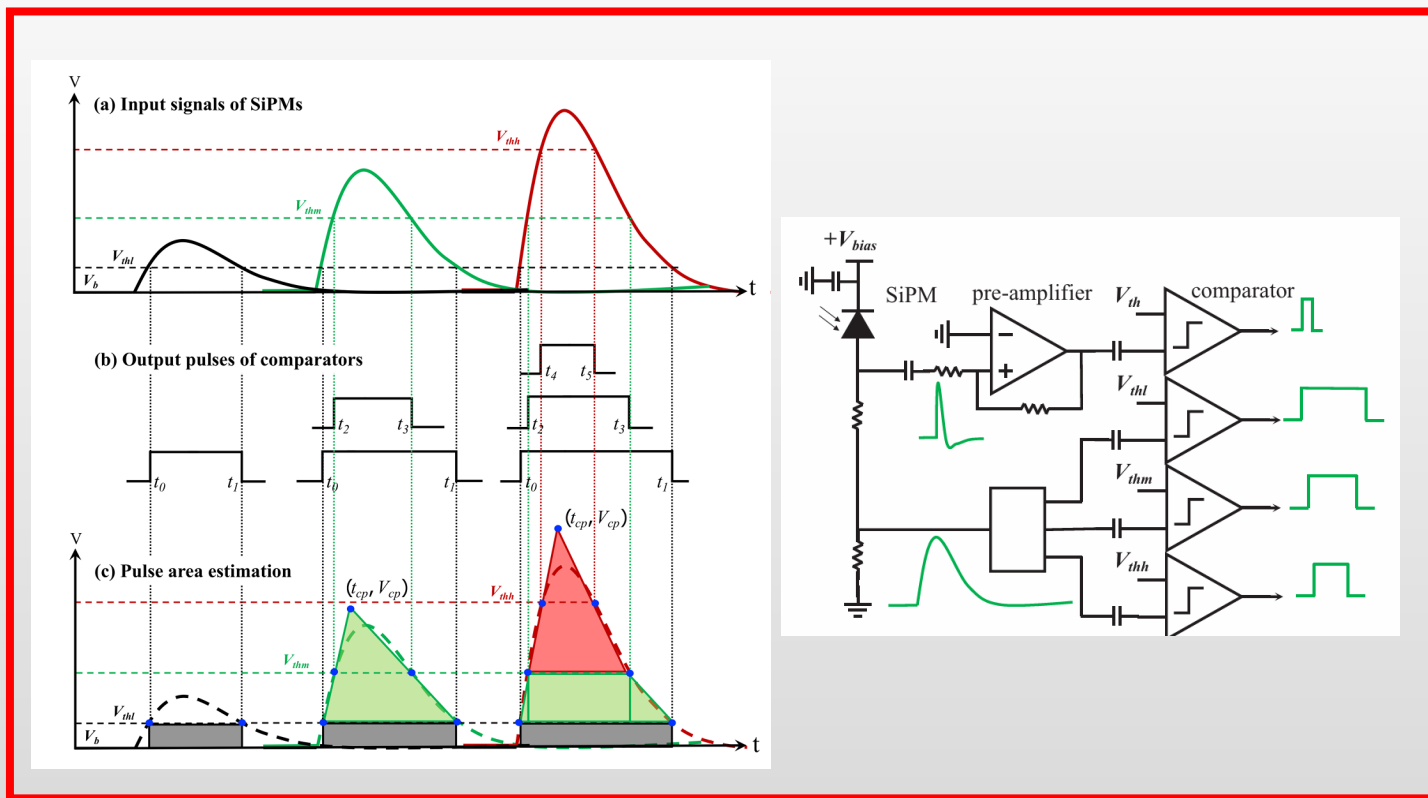
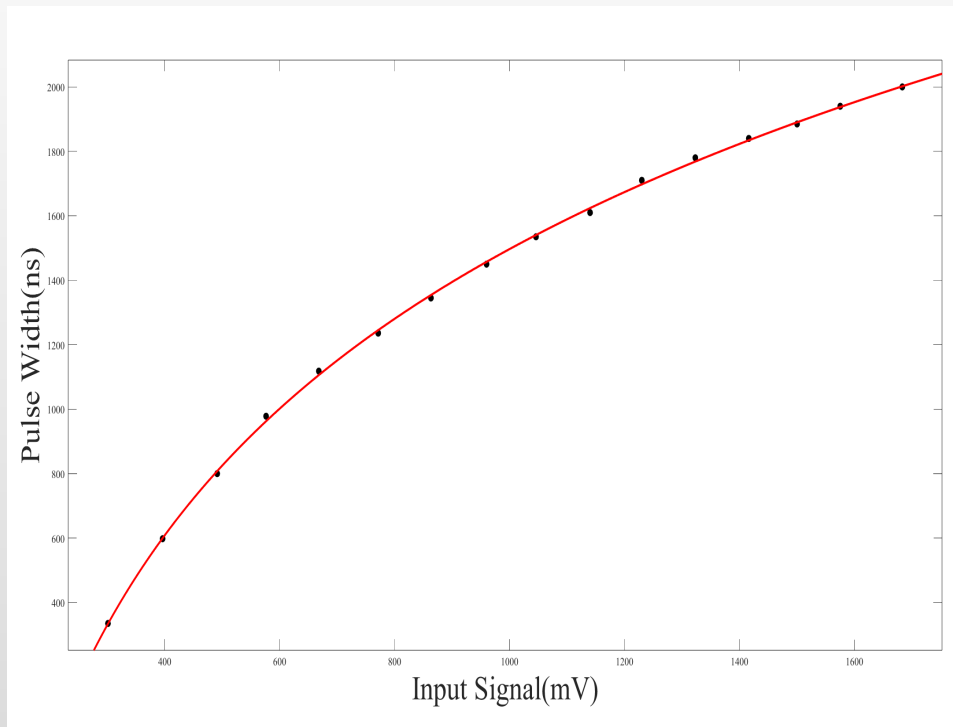
放大后的信号幅度与输入信号幅度的关系



输出脉冲宽度与信号幅的关系



TOT方法存在的问题



多阈TOT(提高能量线性度与动态范围)

时间测量时可根据脉宽变化曲线修正前沿定时的中间游走效应带来的误差。