

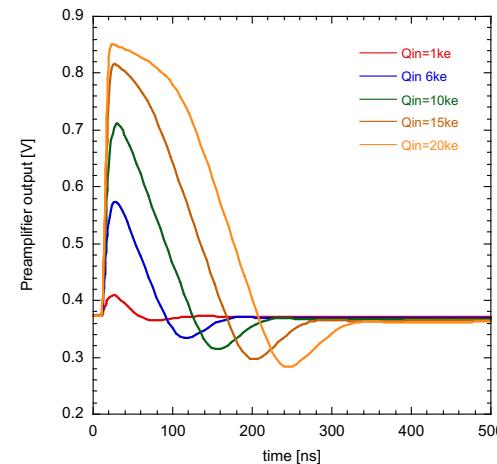
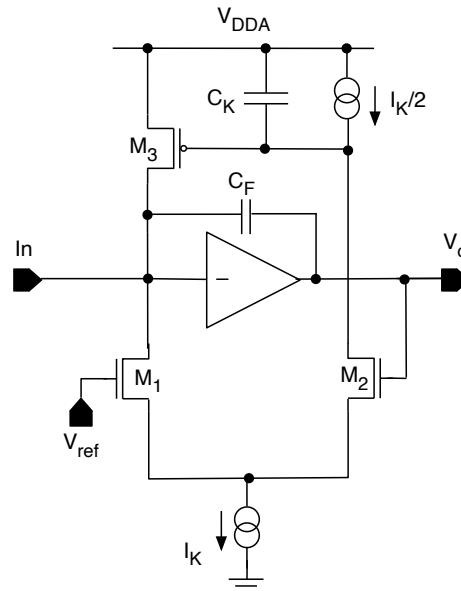
28 nm CMOS analog front-end channels for future pixel detectors

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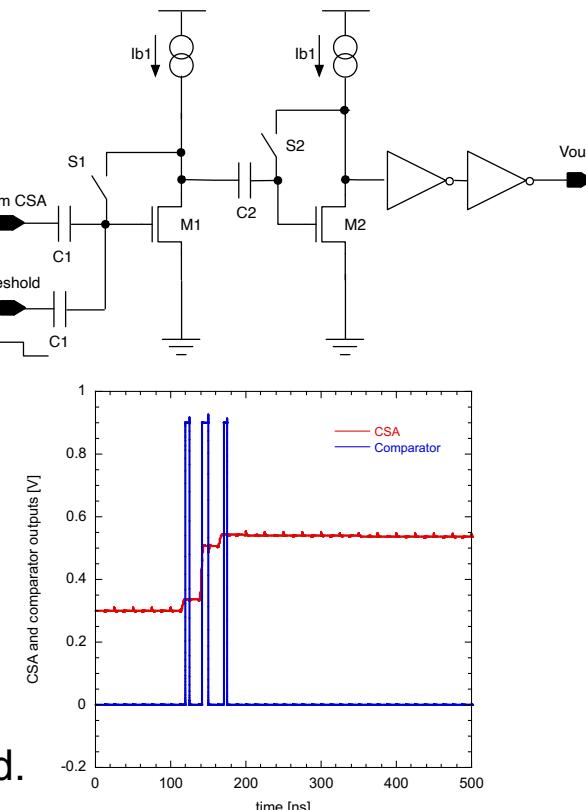
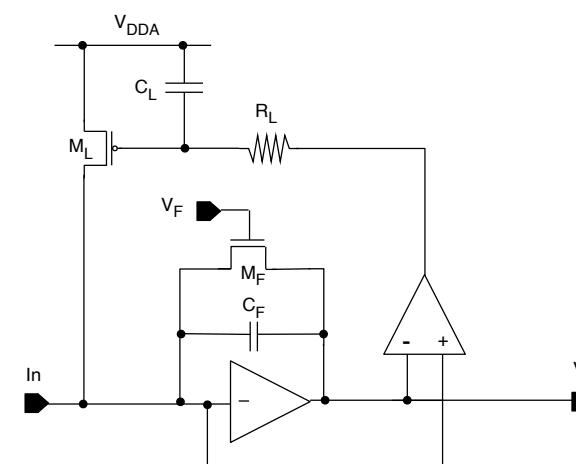
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- Two different **analog front-end designs** are being investigated, in a 28 nm CMOS technology, in the framework of the **INFN Falaphel** project (focused on the development and integration of Silicon Photonics modulators with high speed, rad-hard electronics)
- **Time-over-Threshold (ToT) based front-end** → charge sensitive amplifier (CSA) + DC coupled comparator, with ToT A/D conversion of the signal + threshold tuning DAC
- **Flash ADC based front-end** → CSA + AC coupled bank of auto-zeroed comparators implementing the flash A/D conversion

ToT based front-end



Flash ADC based front-end



- In this work, the **design** and the main **simulation results** of the two architectures are reported.