

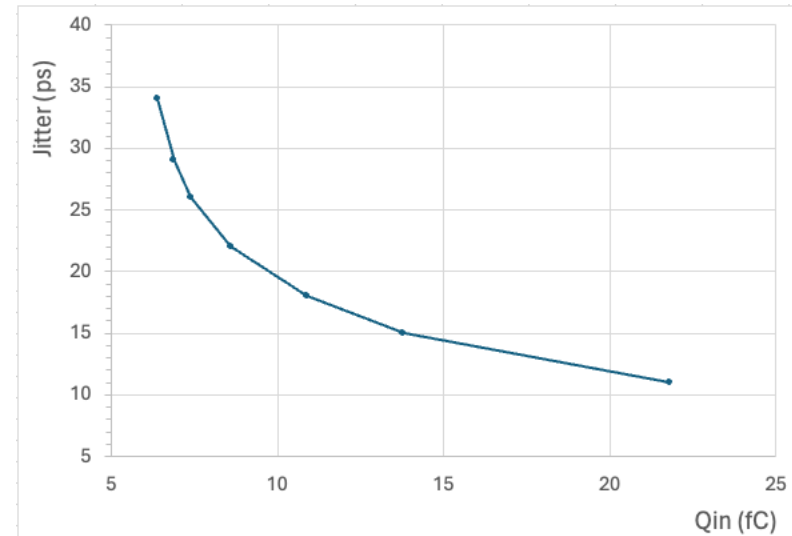


FCFD - AC-LGAD Strip Readout

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Status and Next plans

- FCFDv1 chip is now being tested
 - Measurements with internal charge injections performed with an LGAD-like signal being injected.
 - With input capacitance ~ 3.5 pF we achieve around 11 ps time resolution
 - The analog output works linearly over the range of input charge from 7 fC to 60 fC, the discriminator flip time output stays constant within around 10 pS



Jitter measurements with 3.5 pf input capacitance and charge injection

- We have now started preparing for the test beam in FNAL in the end of May
- Our measurements of the AC-LGAD strip sensors showed the complex CR-network which complicates operation of the ASIC
 - Additionally, the capacitance for some of the sensors is a lot larger than we originally specified
 - Hamamatsu 5mm E-type strip sensors behave the best so far, and we are now adapting the readout board to optimize performance