Analysis of σ_{noise} vs dark current

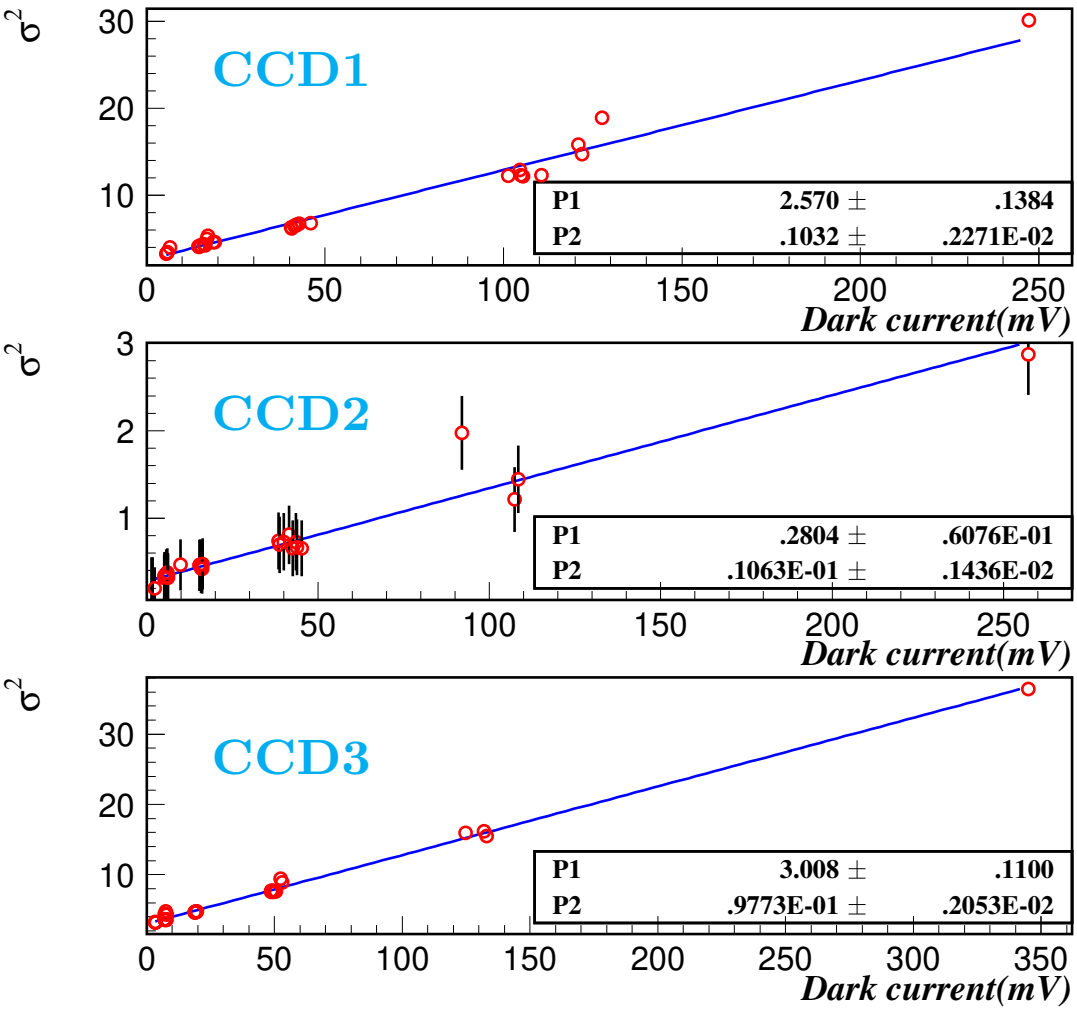
Readout (electric) noise $\sigma_{readout}$ stays constant

$$\sigma_{noise}(T) = \sigma_{dark}(T) \oplus \sigma_{readout}$$

Thermal excitation of e^- obeys Poisson statistics

$$Dark = Gain \cdot N_{e^-}, \quad \sigma_{dark} = Gain \cdot \sqrt{N_{e^-}}$$

$$\Rightarrow \sigma^2_{noise}(T) = Gain \cdot Dark(T) + \sigma^2_{readout}$$



$$\sigma_{noise}(T),\ Dark(T) \Rightarrow Gain,\ \sigma_{readout}$$