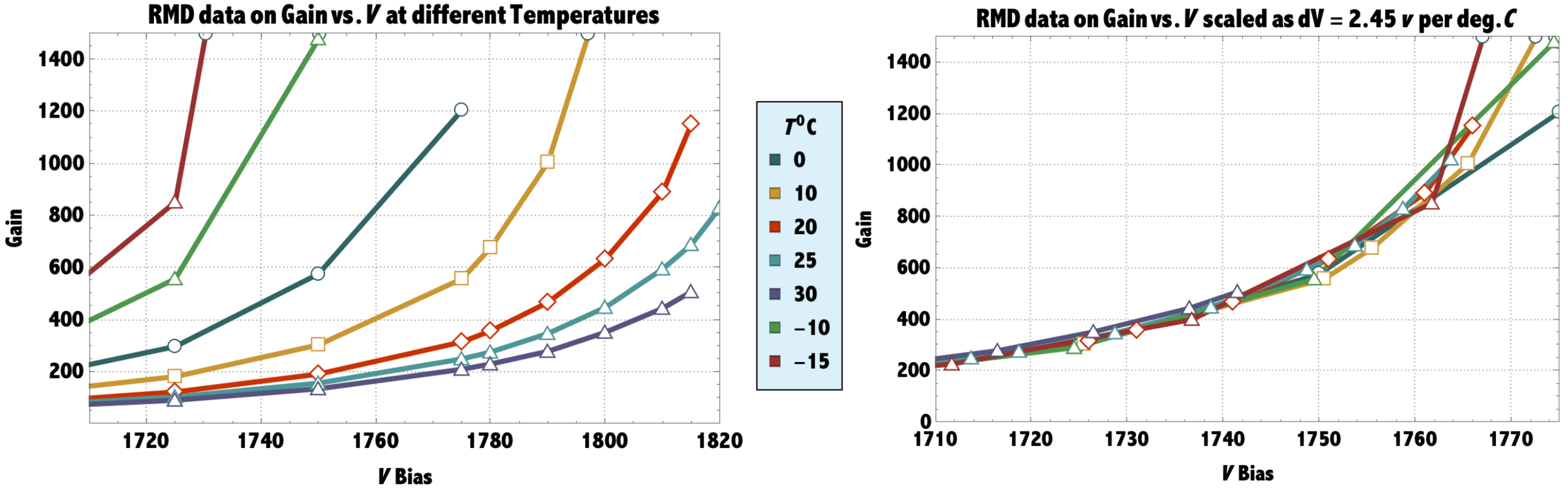
# RMD Gain Measurement




RMD 8x8mm$^2$ avalanche diode Gain vs. bias voltage response for 20 nsec(wide ?) 425nm laser pulses. Unity gain refers to the amplitude obtained at the ~300V bias where amplitude is roughly V independent.

An attempt was made to parametrize regular trend in V required for a given gain vs. T by an ad hoc re-scaling of V -> V-2.45*T($^0$C). This parametrization of the pattern up to Gain~1000 may prove useful for discriminating among impact ionization models that appear in the literature and as options in ,eg SILVACO™ for modeling such devices.

It should be noted that this particular definition of gain, as it applies to visible light photo-detection in an APD, will likely differ from the response to minimum ionizing particles (or the IR laser model used) since, in the former case all photoelectrons traverse the region where impact ionization occurs.