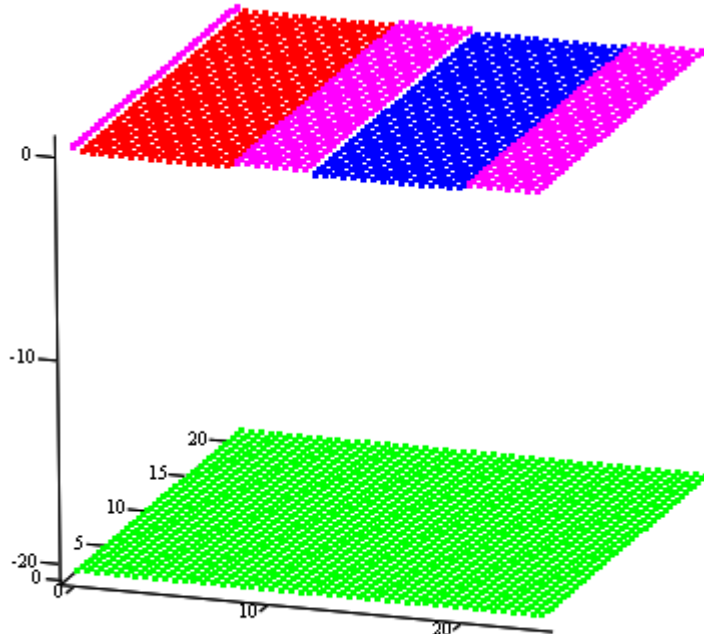
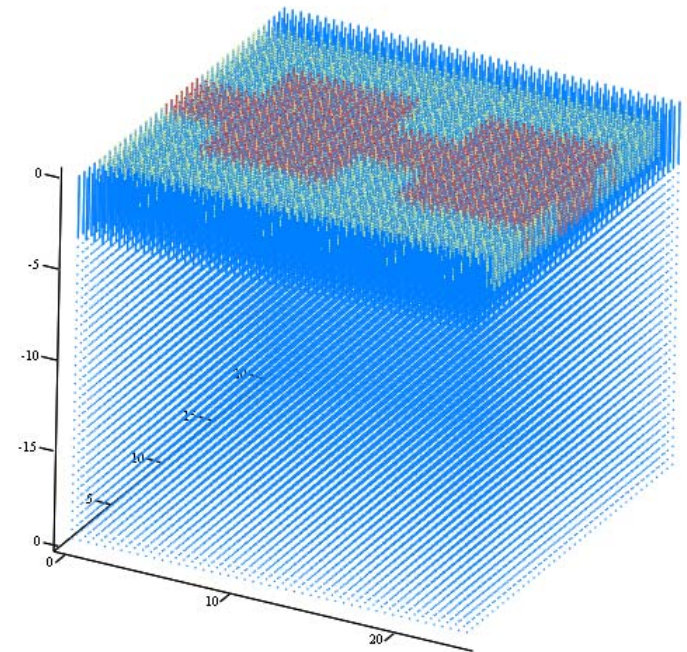


Profiled Notch CCDs

- Profiled Notch structure.
 - ◆ Gate 1 red, gate 2 blue.
 - ◆ Pedestal purple: here pedestal base 100 nm above level of base of gates.



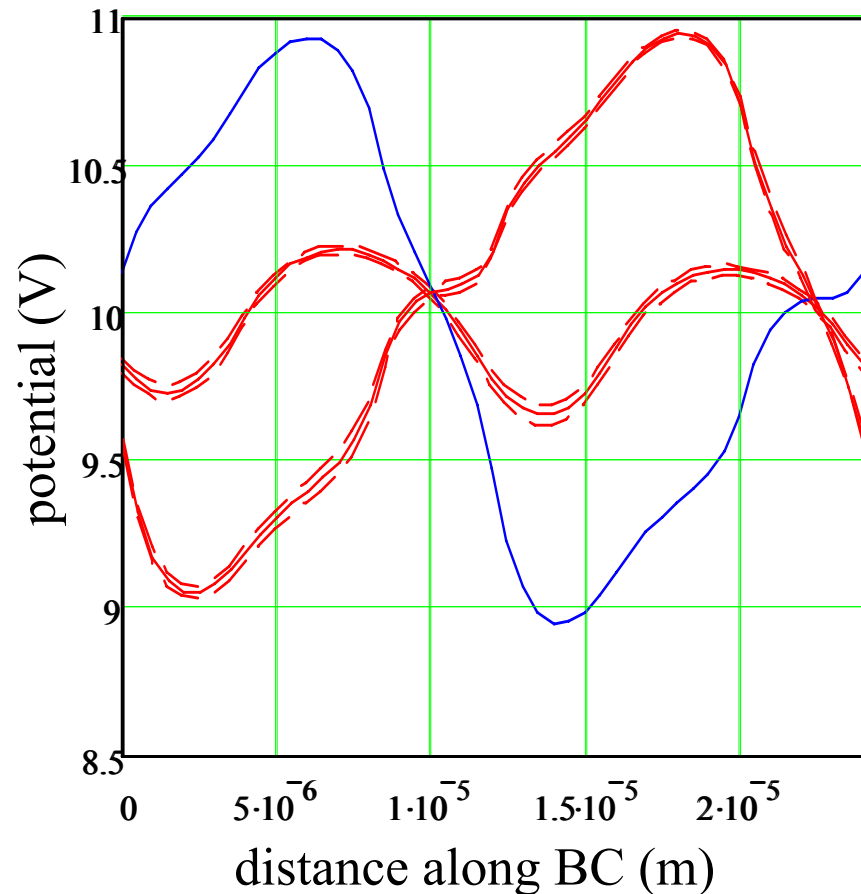
- (Surface) dopant concentrations:
 - ◆ Blue 1×10^{13} ions cm^{-3} .
 - ◆ Yellow 1.3×10^{16} ions cm^{-3} .
 - ◆ Red 2.6×10^{16} ions cm^{-3} .



- Yellow and red dopant conc.s half gaussian with $\sigma = 0.41 \mu\text{m}$.

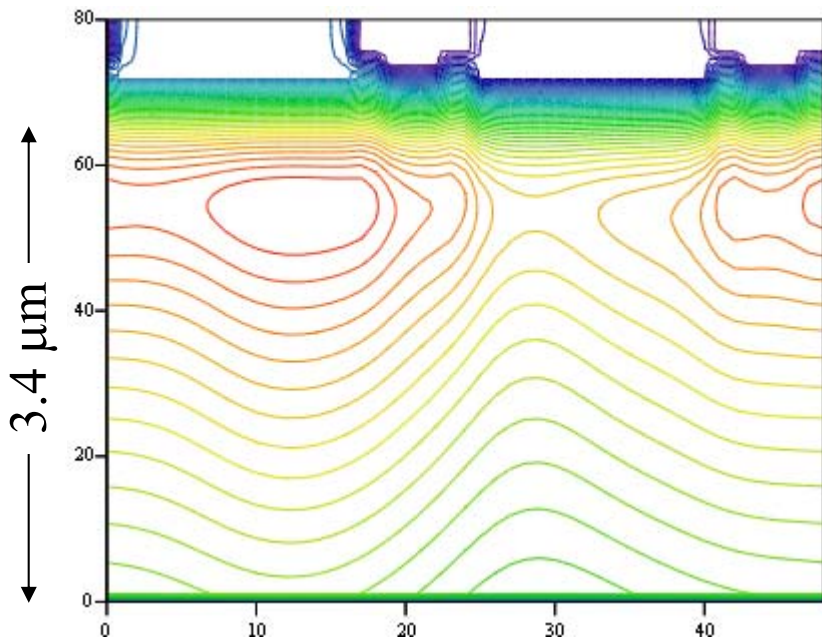
Potential distribution for various gate voltages

- Pedestal set at -1.0 V.
- Potentials shown opposite for:
 - ◆ $V_1 = 2.0$ V, $V_2 = 0.0$
 - ◆ $V_1 = 1.0$ V, $V_2 = 1.0$
 - ◆ $V_1 = 0.0$ V, $V_2 = 2.0$

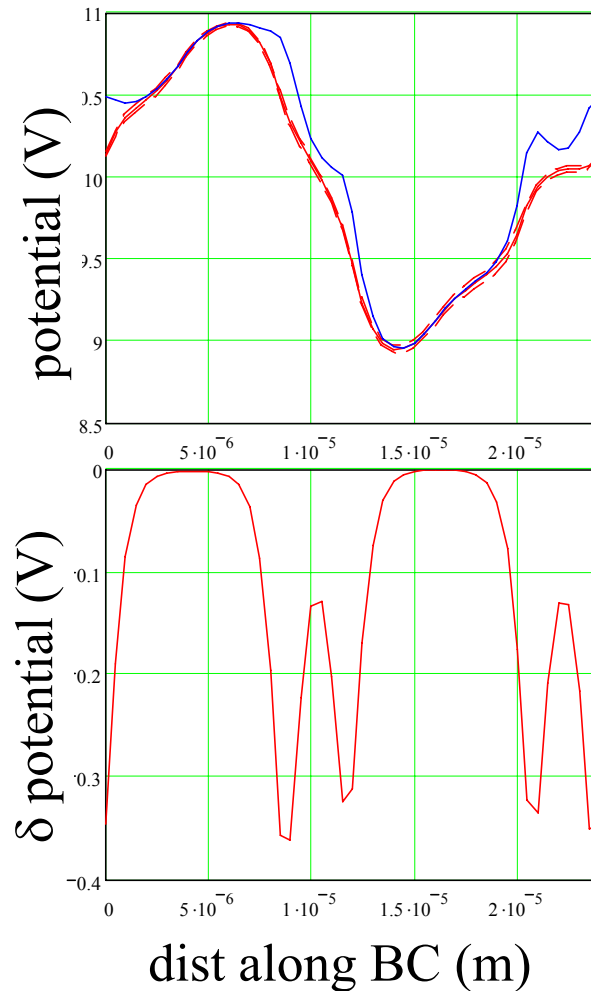


Effect of non-planar pedestals

- Assume pedestal raised by 100 nm within 1 μm of edges.
- Equipotentials in upper section of pixel:



- Potential along buried channel:



Summary

- Started simple calculations of potentials for Profiled Notch CCDs, pedestals raised by 100 nm.
- Calculations for pedestal at 200 nm also underway.
- May be problem with planarity of pedestal introducing potential bumps.