

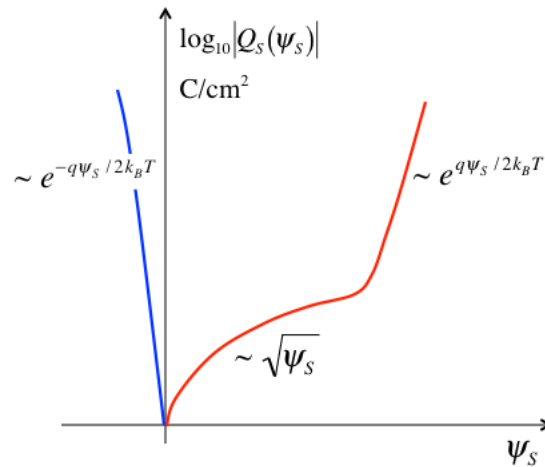
## Essentials of MOSFETs

### Lecture 3.1: Energy Band Diagram Approach

#### Short Problem

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In Lecture 3.1, we used energy band diagrams to argue that the sheet charge vs. surface potential characteristic,  $Q_s(\psi_s)$  should look like the figure below for a P-type semiconductor.



- 1) Produce a sketch like the one above, but for an N-type semiconductor, and explain its shape using energy band diagrams.