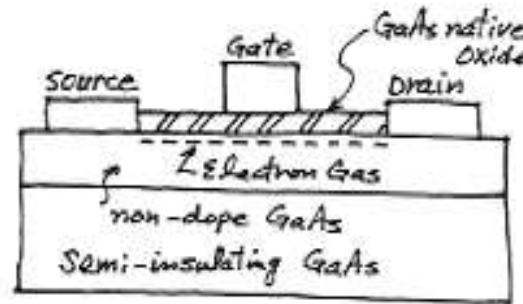
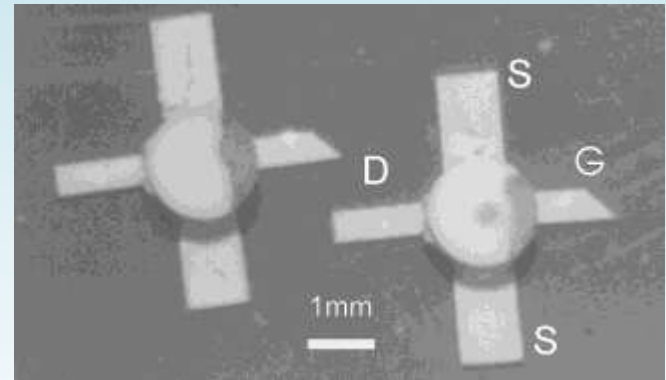


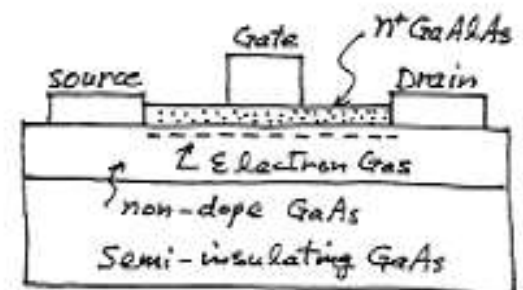
「半導体」第11回

物性研究所 勝本信吾

高電子移動度トランジスタ(HEMT)

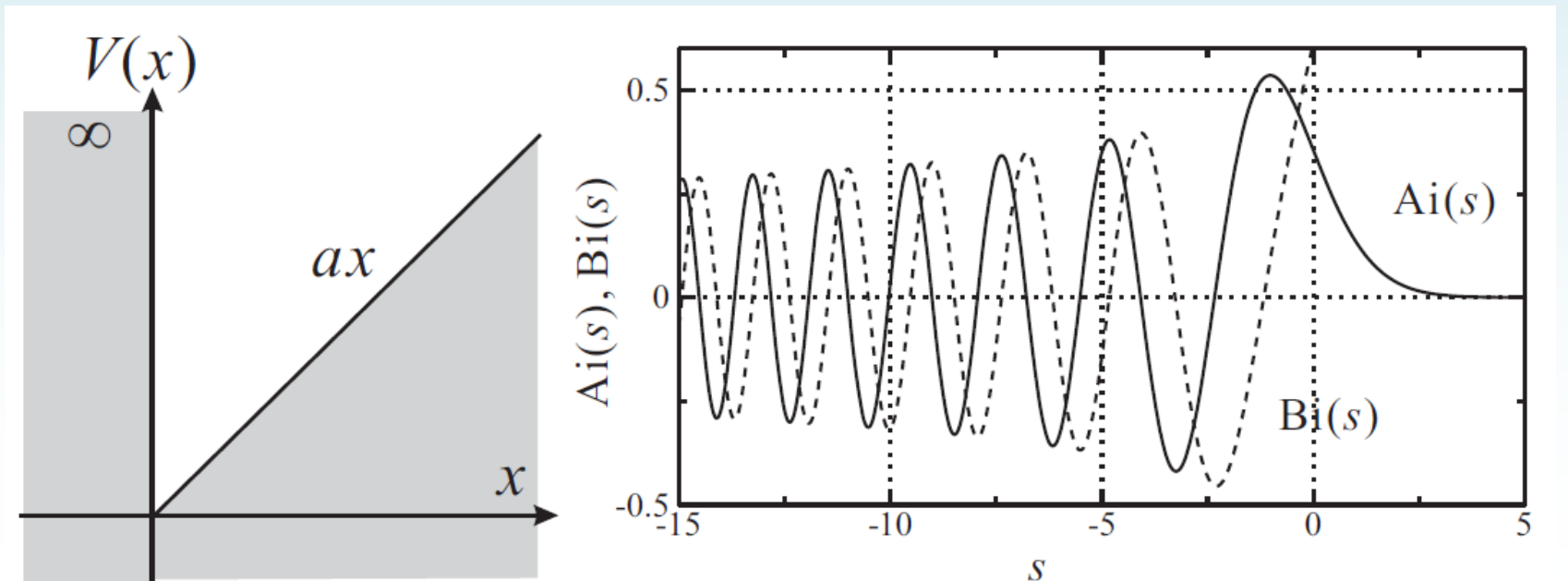
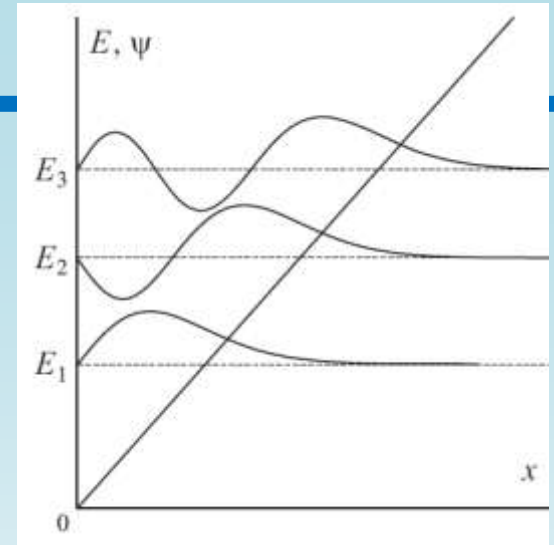
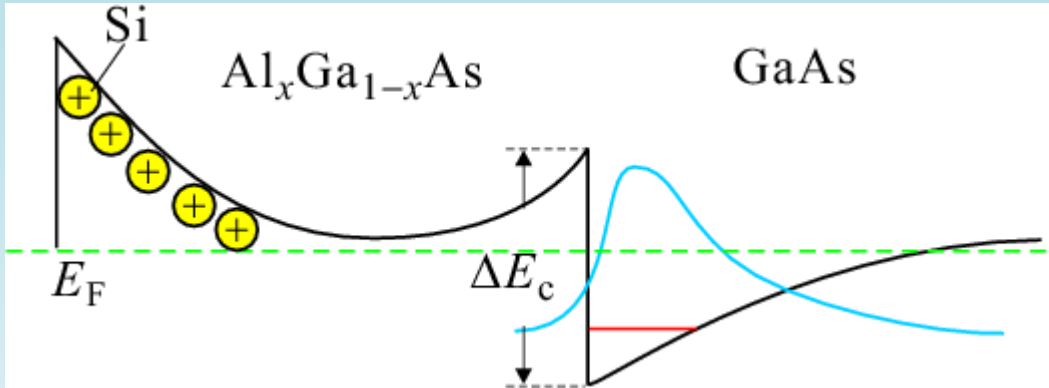


GaAs MOS FET



HEMT

三角ポテンシャル近似



自己無撞着な取り扱い

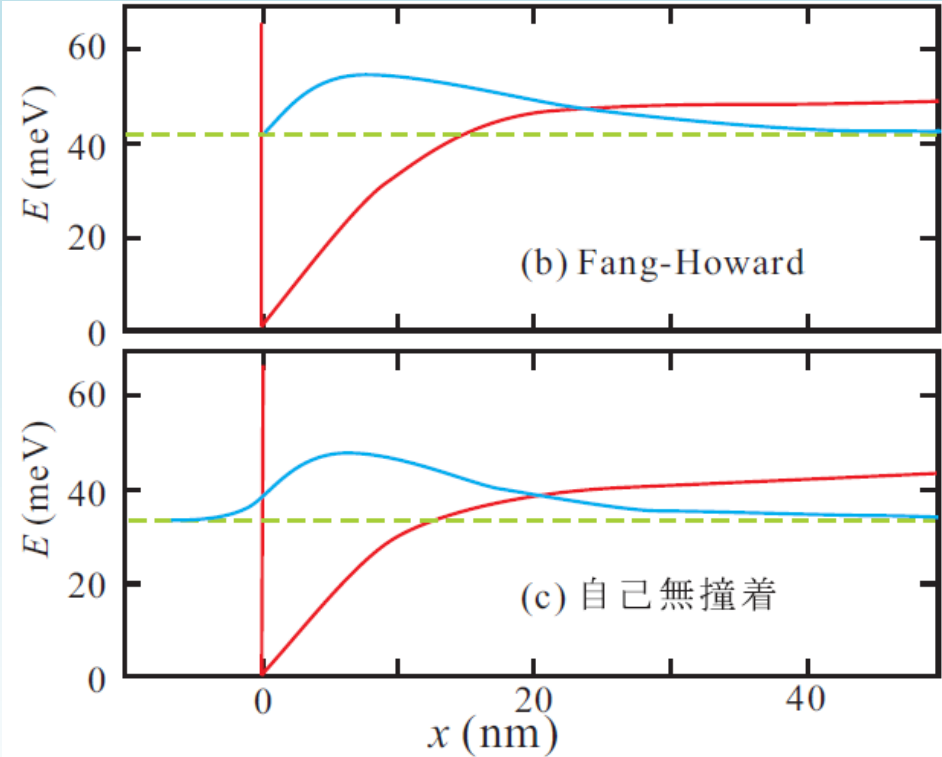
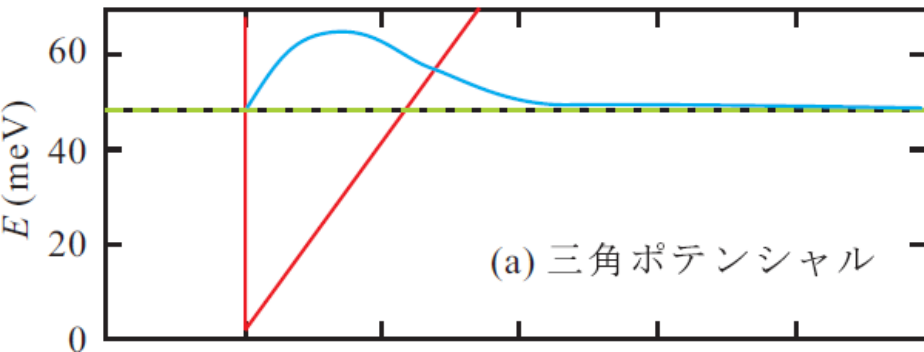
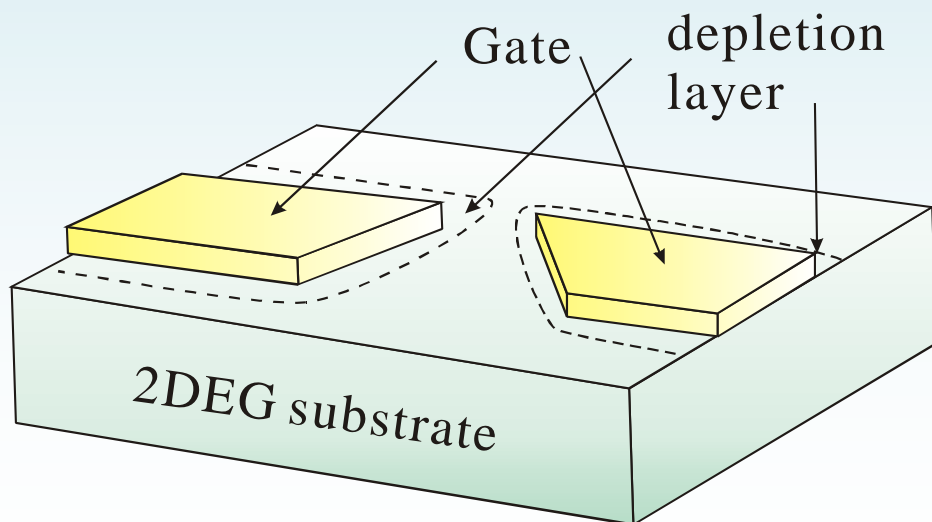
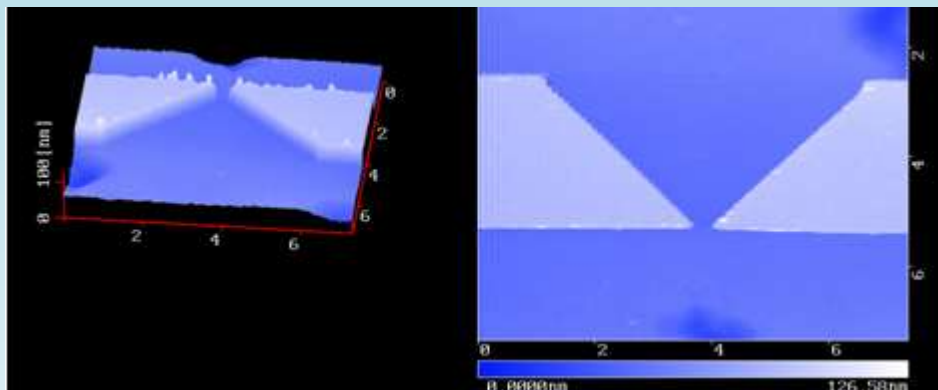
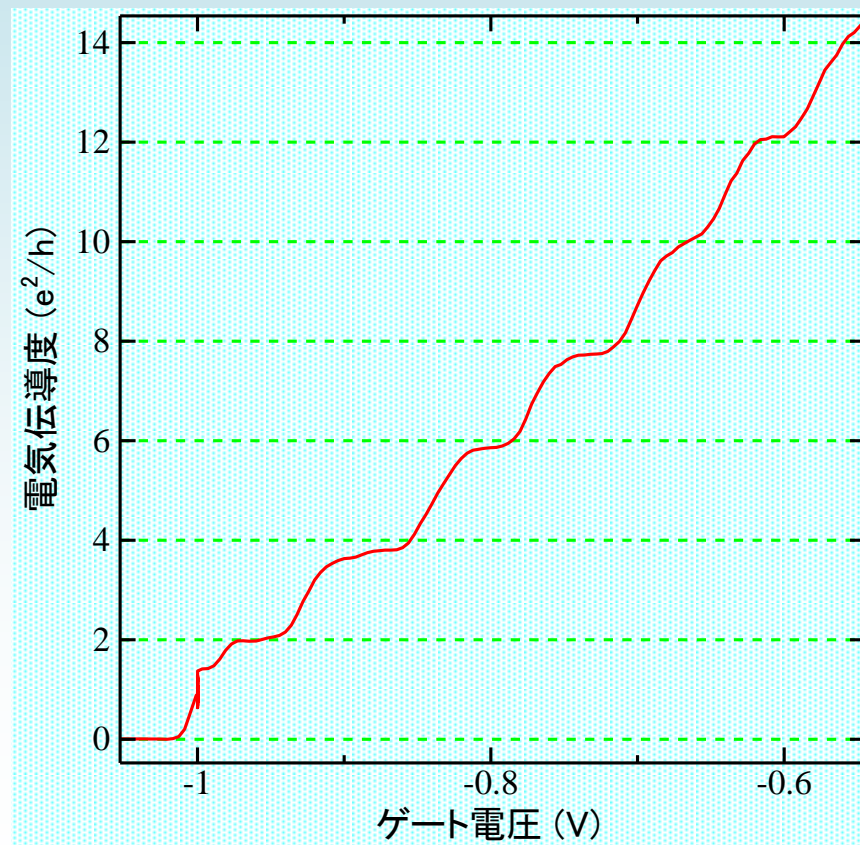


図 8.10 $n_{2d} = 3 \times 10^{11} \text{cm}^{-2}$ を仮定し, $\text{Al}_{0.3}\text{Ga}_{0.7}\text{As}$ -GaAs のパラメーターに対して 3 種類の方法で波動関数, エネルギー準位, (b), (c) についてはポテンシャルを計算したもの.

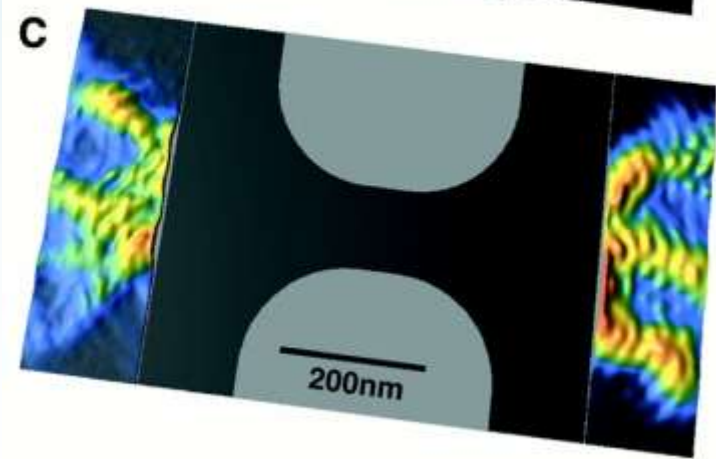
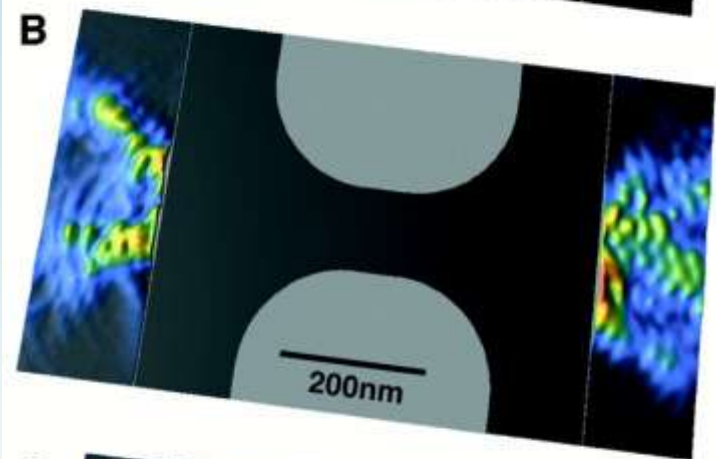
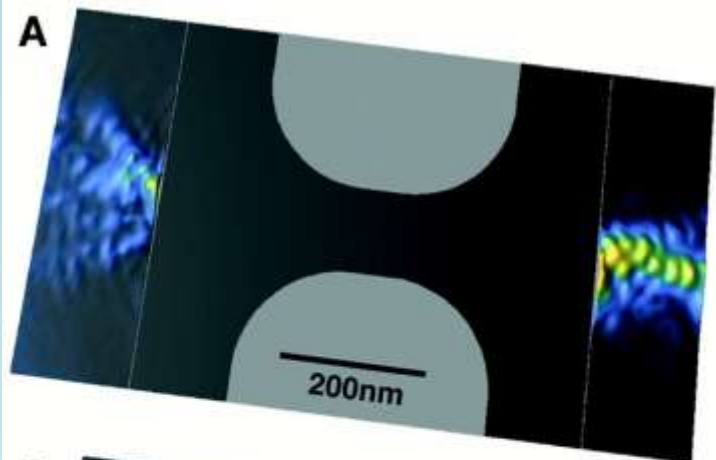
量子ポイントコンタクト (QPC)の電気伝導



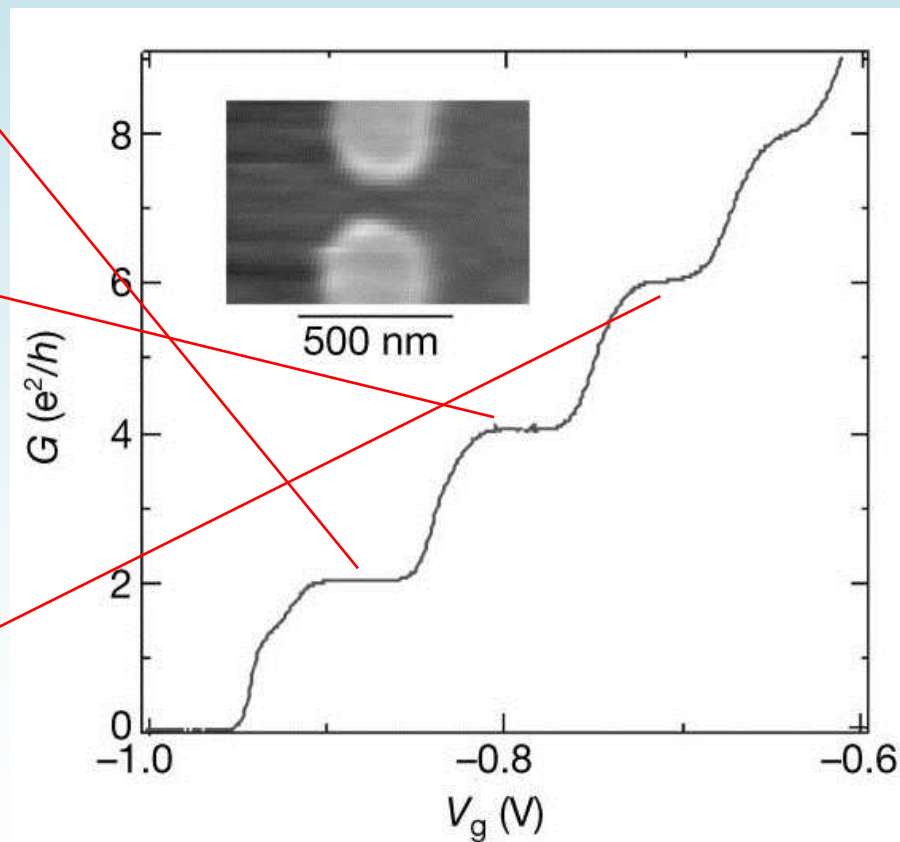
Quantum Point Contact
(QPC)



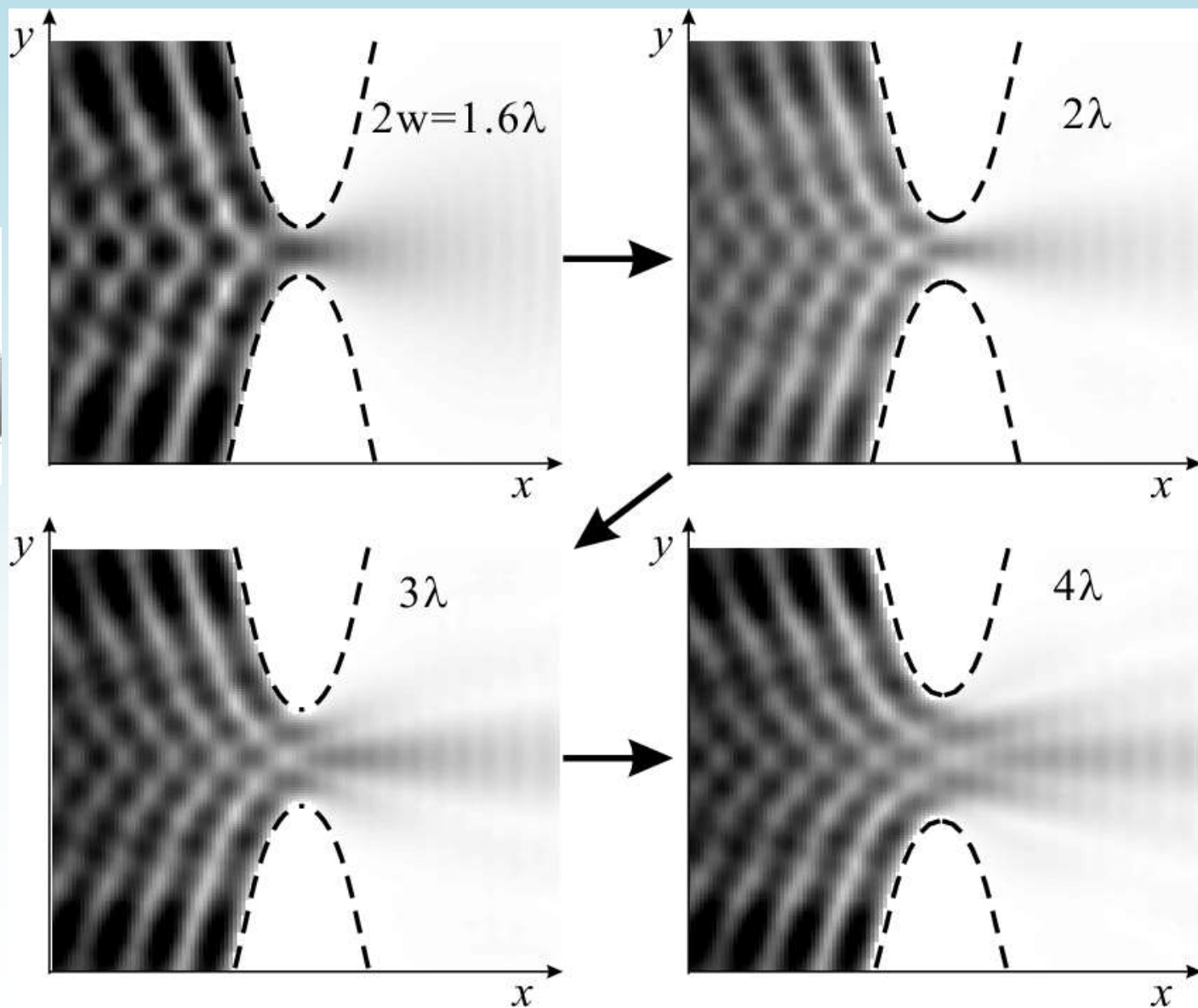
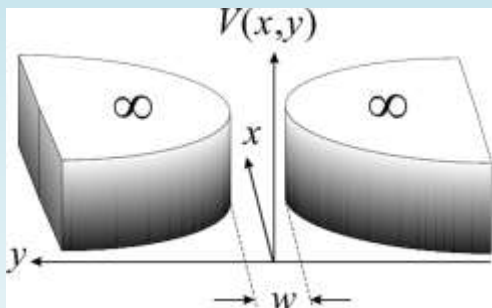
チャンネル伝導度量子化は本当か



ΔG : $0 e^2/h$  $-1.7 e^2/h$



QPCを流れる波動関数の数値計算



$n=2$ の波と探針の影響

