

Why:

- Tera-Hertz Devices possible, High Speed Analog Circuits
- III-V Semiconductors, useful in OptoElectronic Integrated Circuits (OEICS) – Increase electrical gain

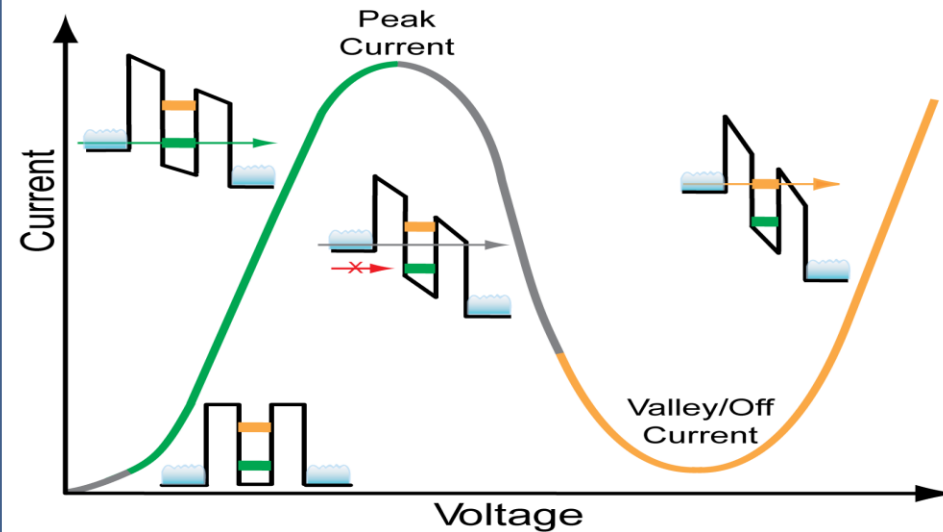
Modeling:

- Double Barrier acts as an electron supply followed by band-pass filter
- Appropriate potential model used is Quantum Charge Self-Consistency

Problems:

- Full Quantum Mechanical understanding needed
- Computation capacity restricts accuracy (especially 3D transport)

- Characterization of parameters w.r.t. IC requirements, like nominal PVCR



Results:

- Results match with theoretical insights providing us with appropriate Operational Limitations
- Modeling Realistically extended systems remains a challenge, reduction in simulation time needed