

Objective:

- Explain experimentally observed anisotropy and magnetic field dependence of $f_{v\pm}$ in Si QDs.

Approach:

- Atomistic spin-orbit interaction (SOI) + Micro-magnetic field + Interface steps.

Results:

- SOI + micro-magnet govern anisotropy
- SOI introduces 180° periodicity in $f_{v\pm}$
- SOI causes B-field dependence of $f_{v-}-f_{v+}$
- Interface steps control sign and magnitude of $f_{v-}-f_{v+}$

Impact:

- SOI can't be ignored: contrary to bulk Si
- Interface roughness will cause dot-to-dot variations in $f_{v\pm}$

