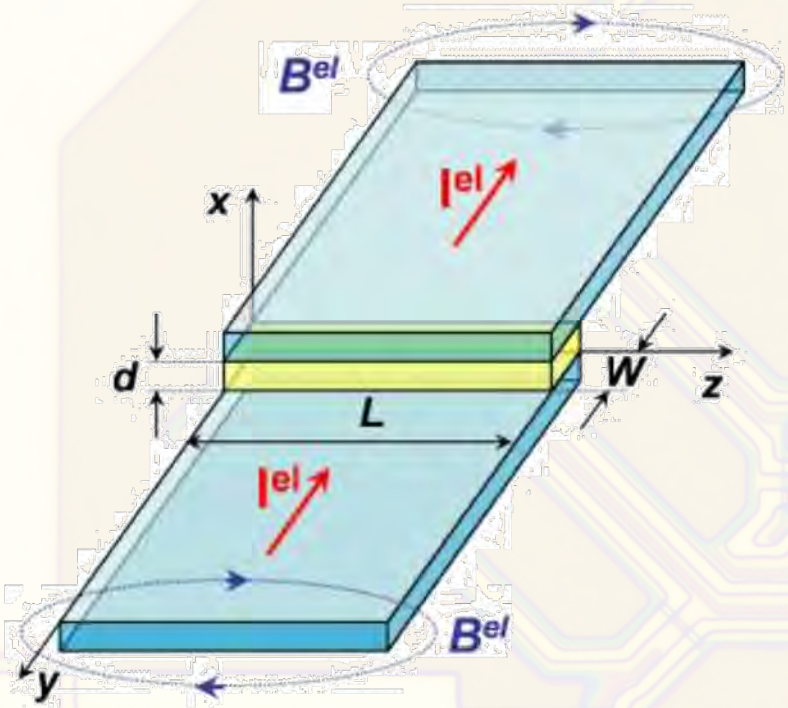
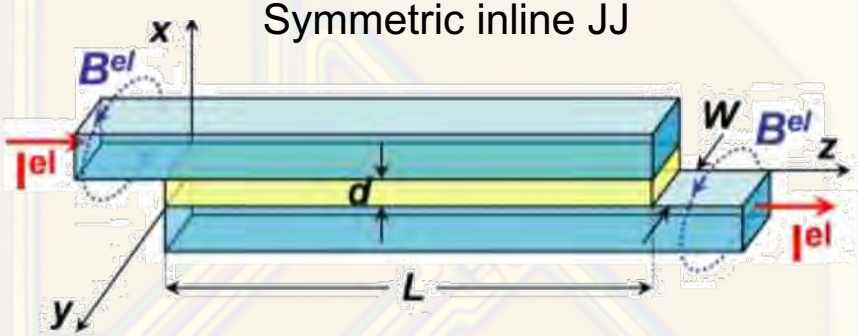
Junction Geometries

Overlap JJ

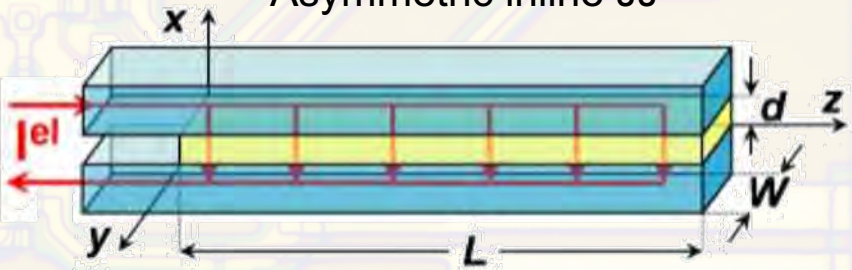


Inline JJs

Symmetric inline JJ

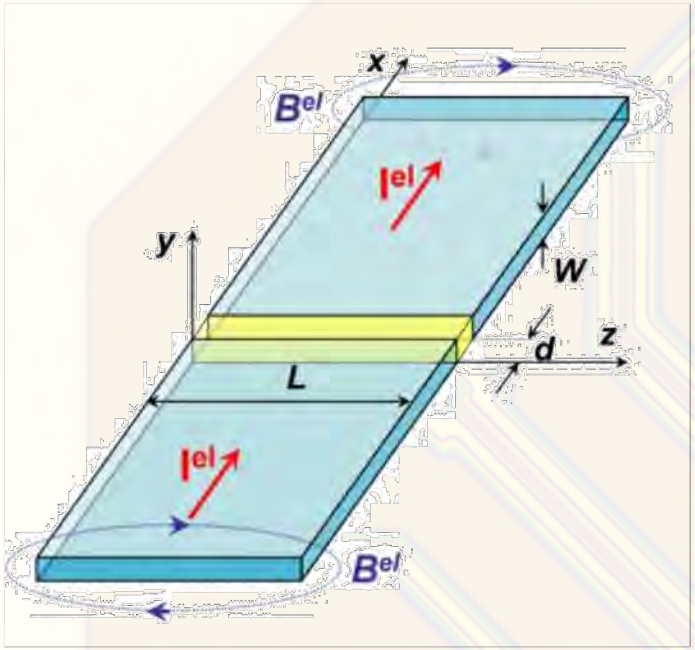


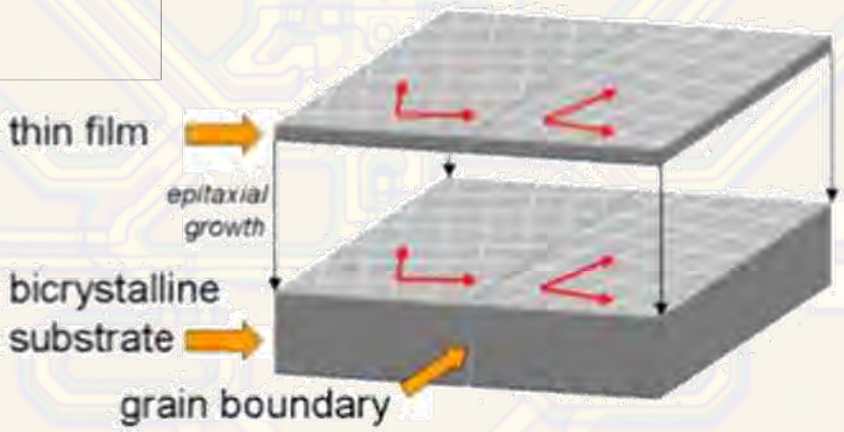
Asymmetric inline JJ



Junction Geometries

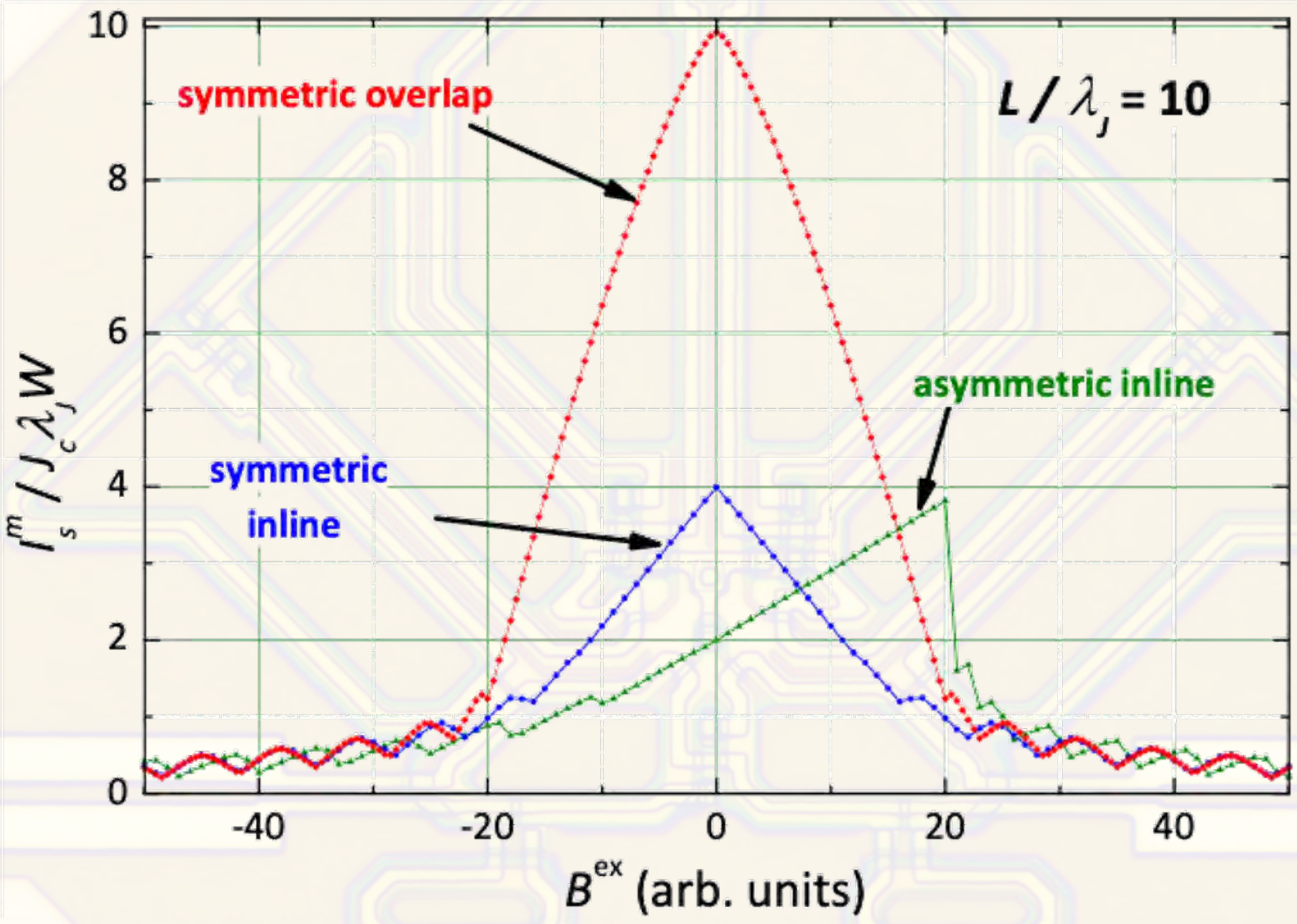
Grain boundary JJ





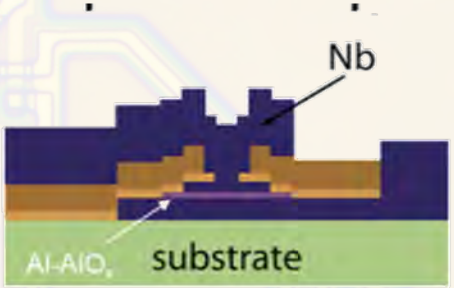
HTS bicrystal grain boundary junction

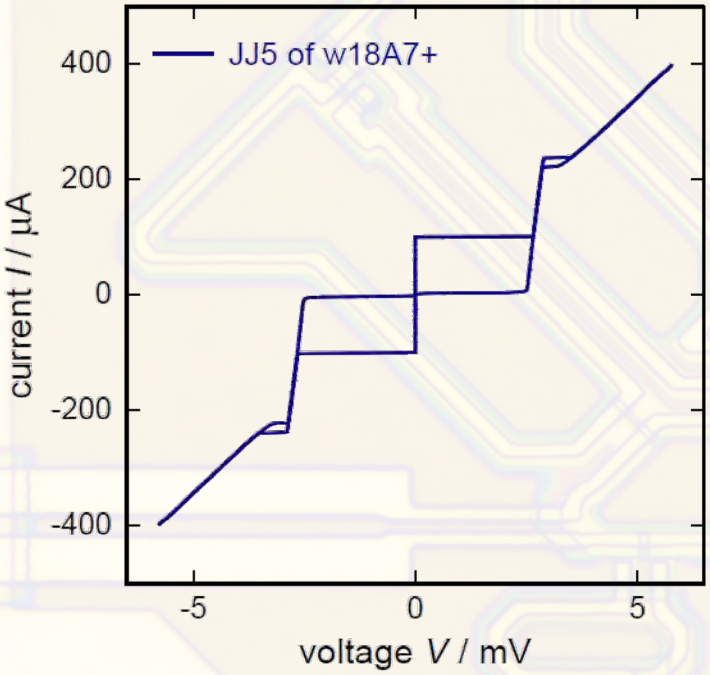
Maximum Supercurrent for Different Junction Geometries

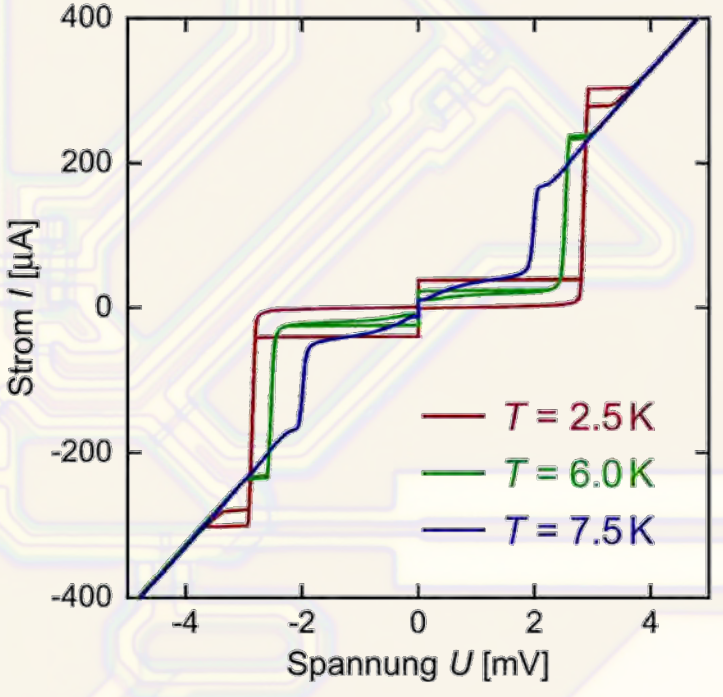


IVC Curves of JJ Driven by Constant Current Source

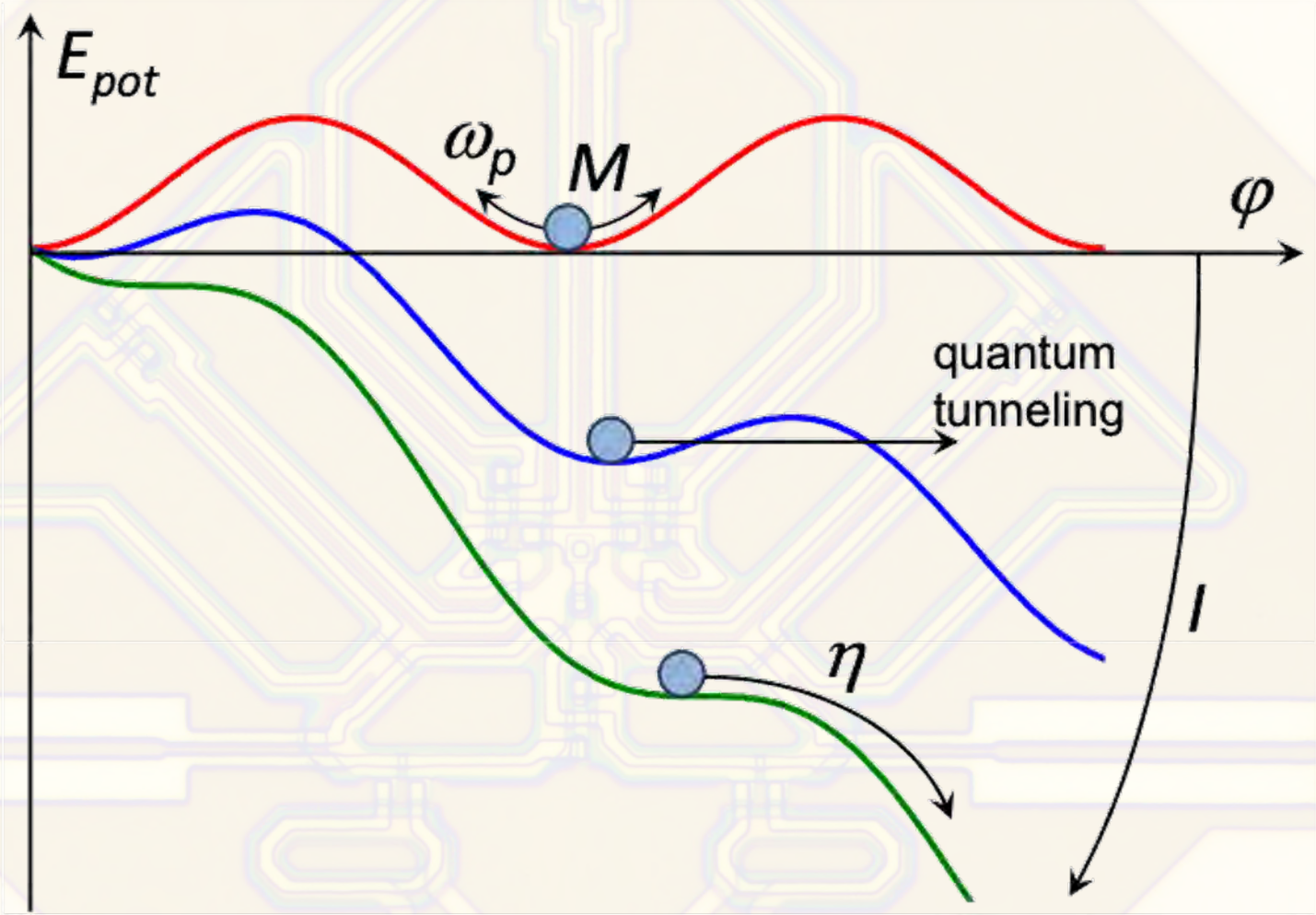
Nb / Al-AlO_x / Nb



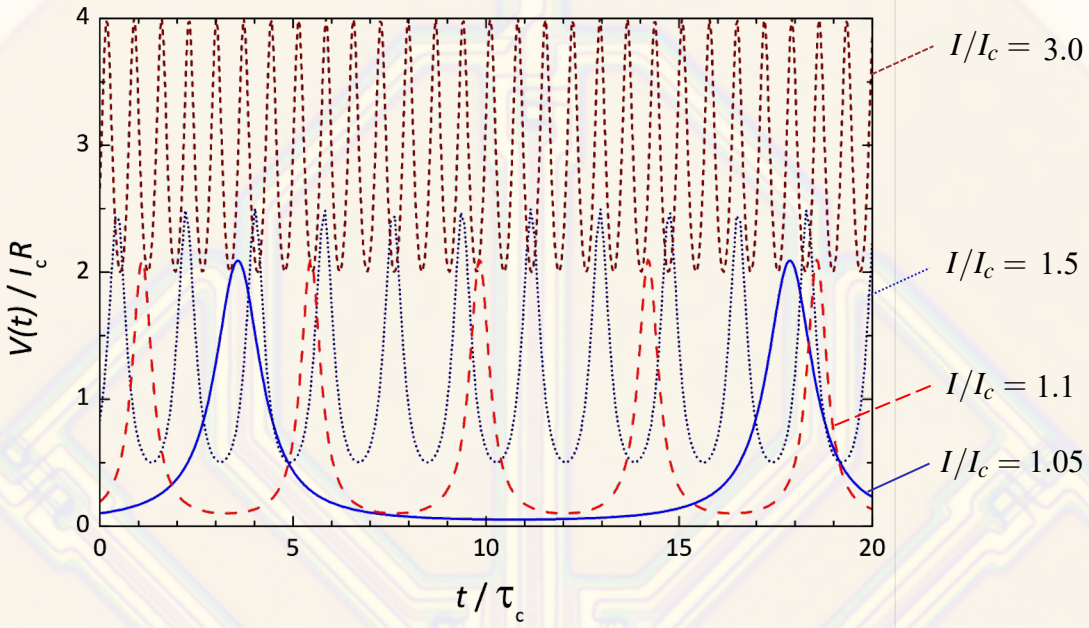


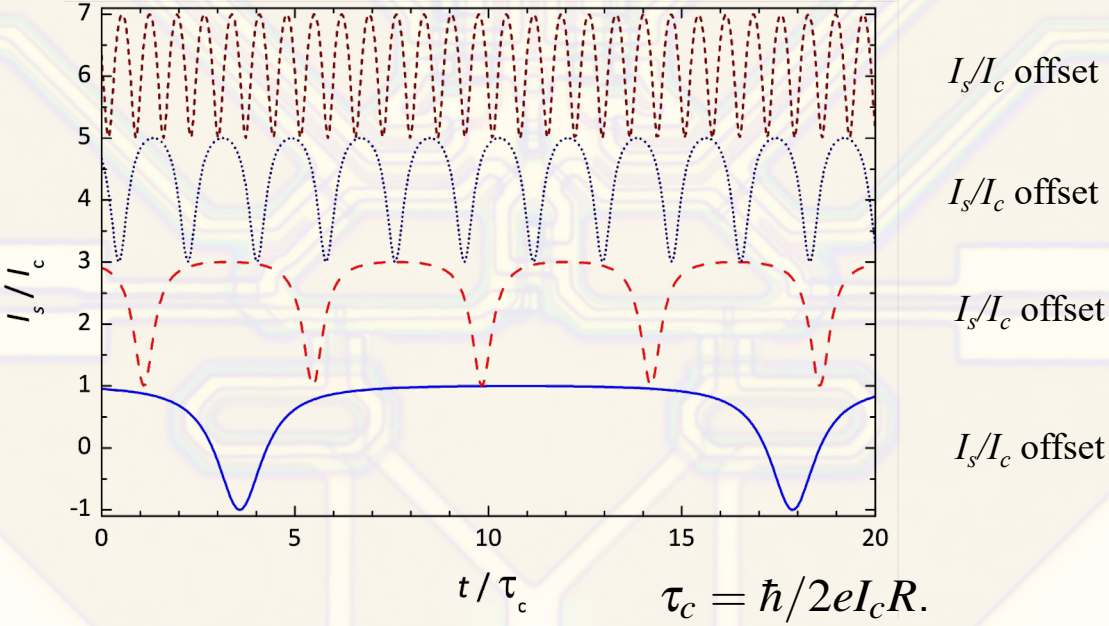


RCSJ Model: Tilted Washboard Potential



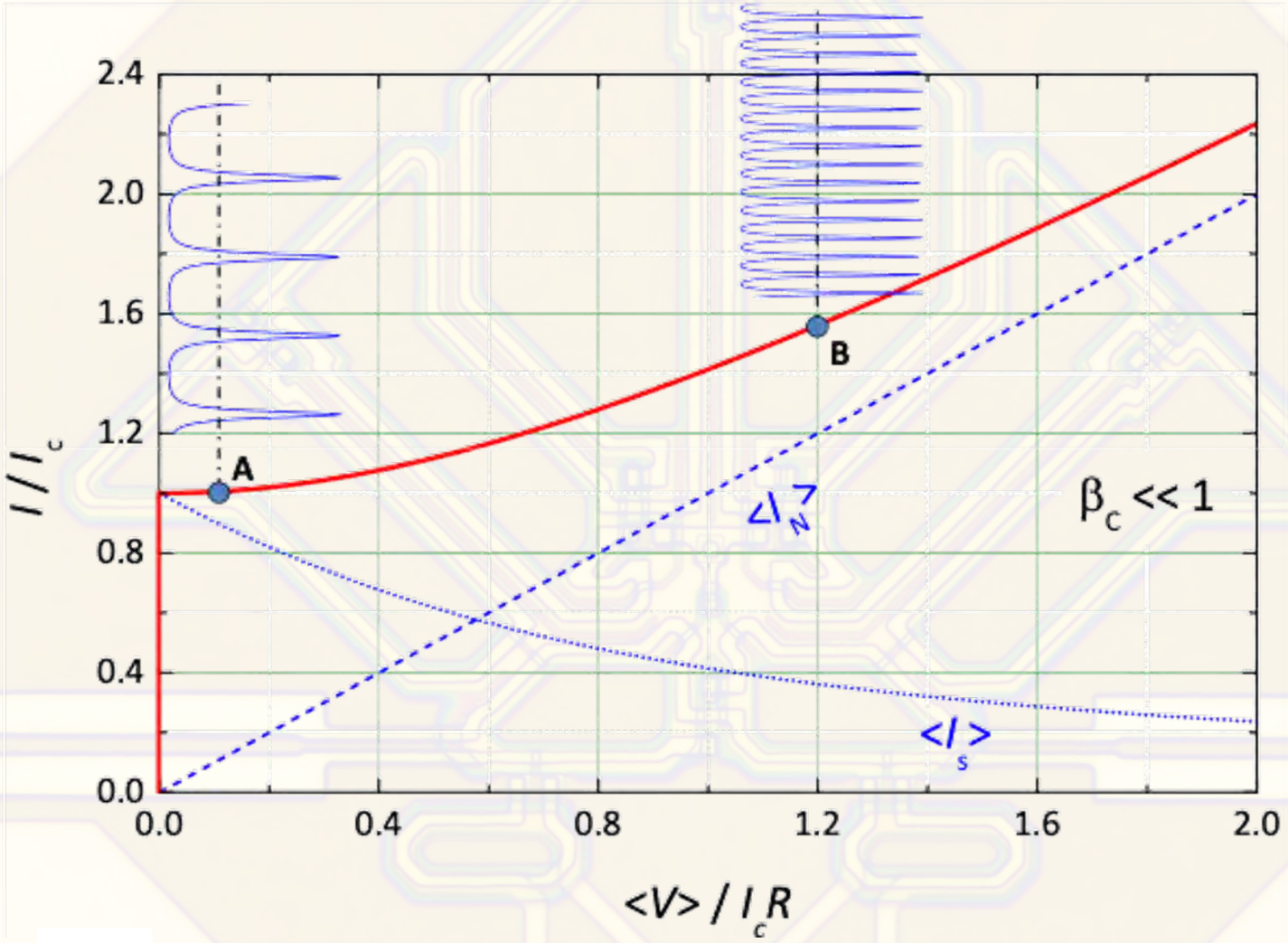
Current and Voltage Variations in Voltage State of JJ





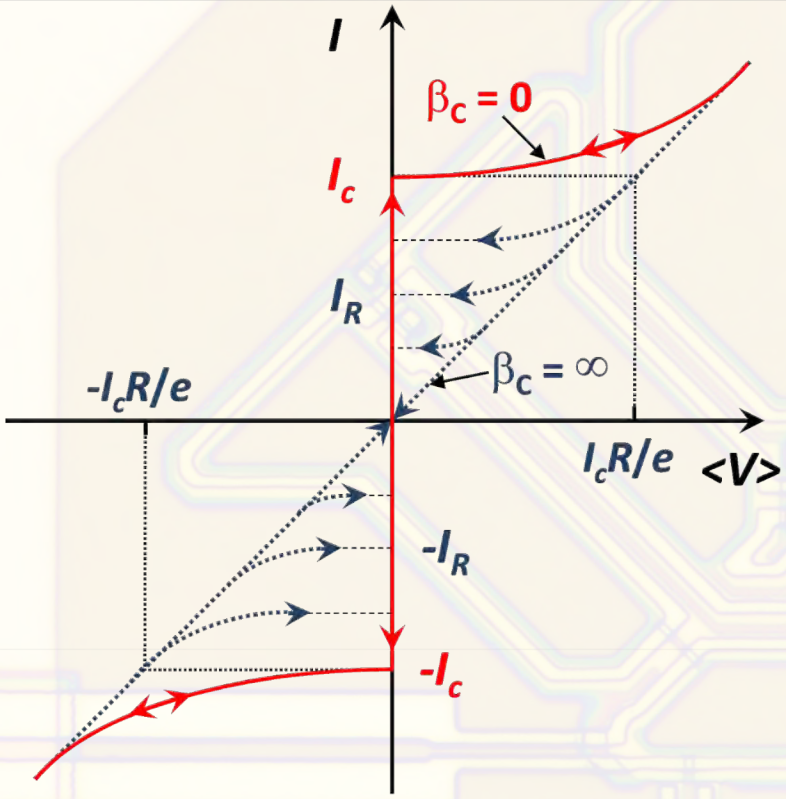
$$\tau_c = \hbar / 2eI_cR.$$

IVC in Voltage State of Overdamped JJ

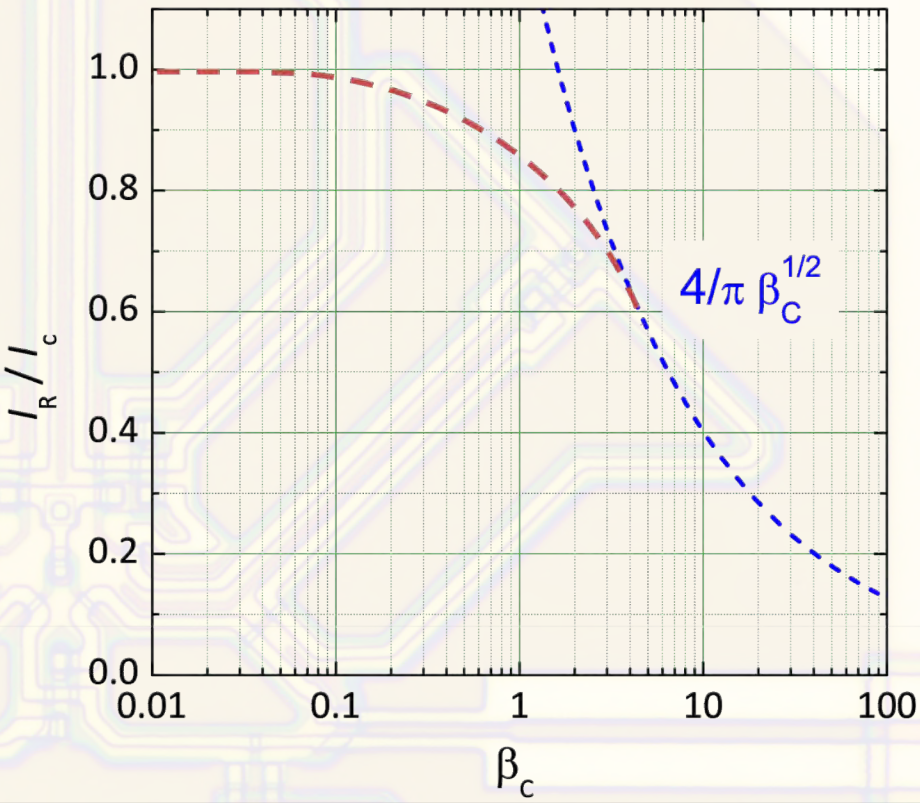


JJ With Intermediate Damping

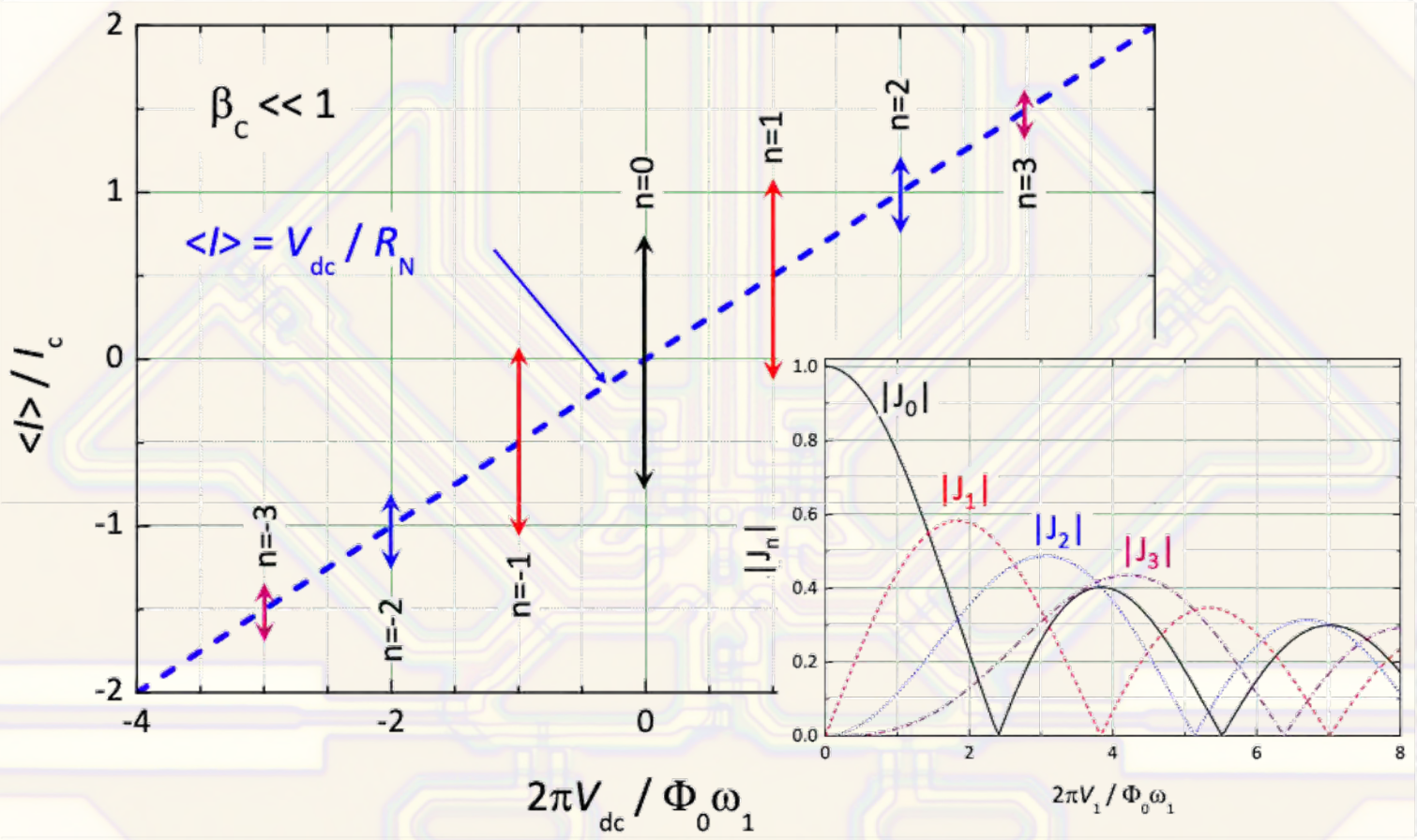
IVC characteristic



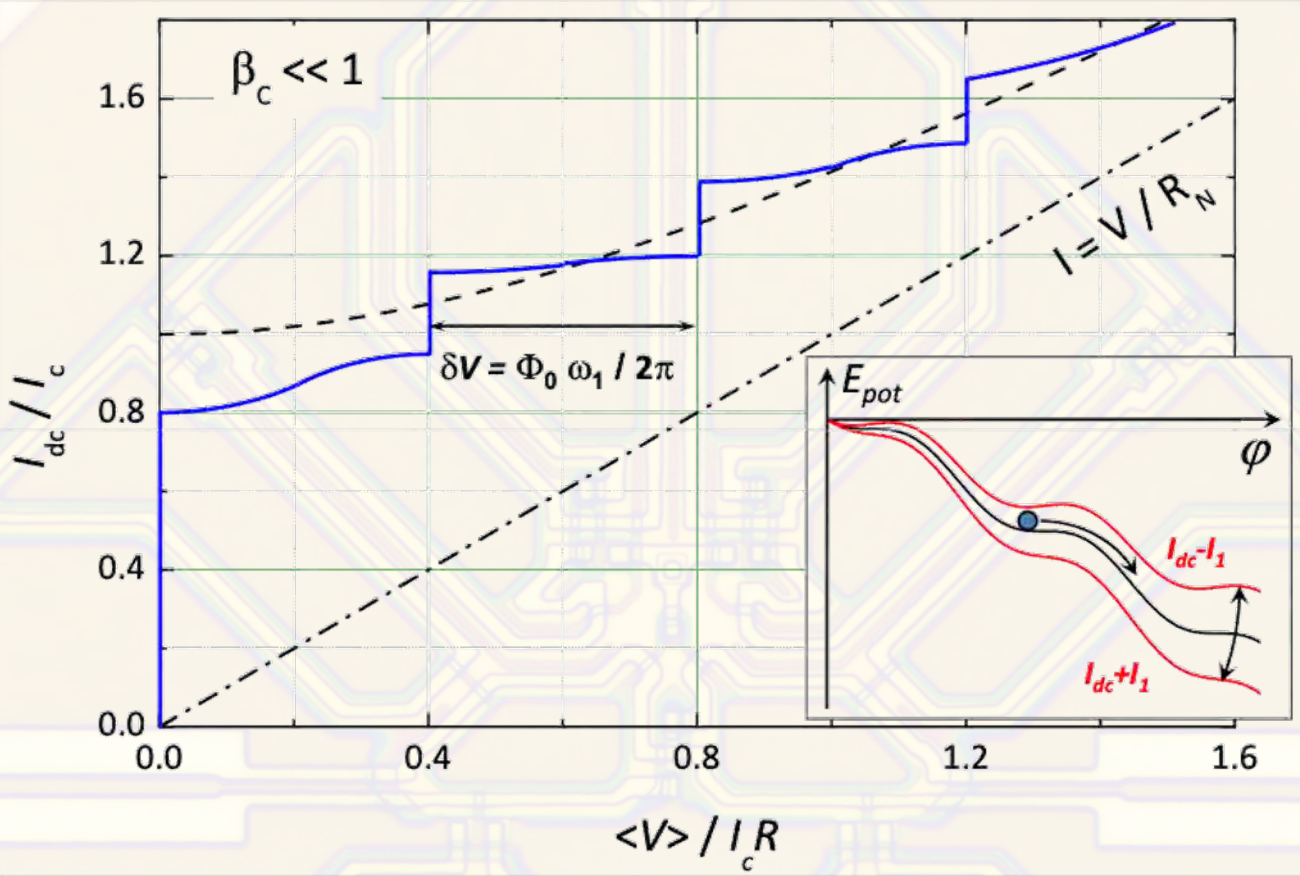
I_R/I_c vs β_c



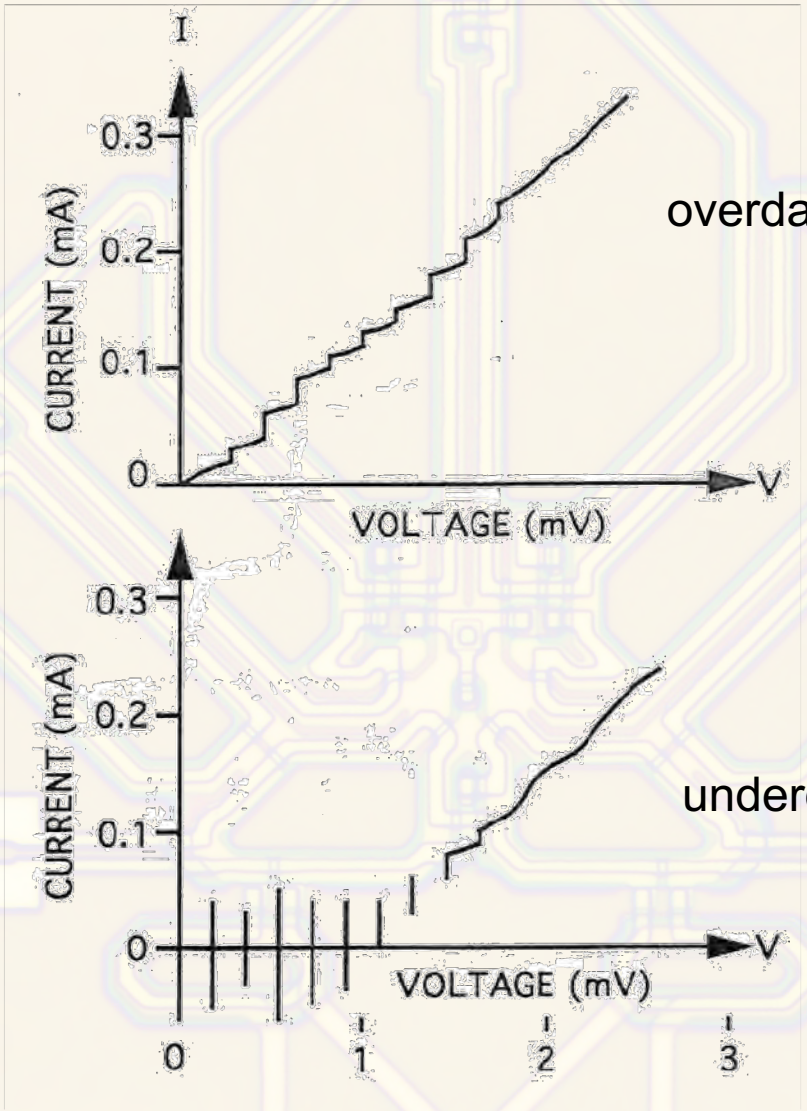
⟨I⟩ vs V_{dc} for Overdamped JJ Driven by ac Voltage



I_{dc} vs $\langle V \rangle$ or Overdamped JJ Driven by ac Current



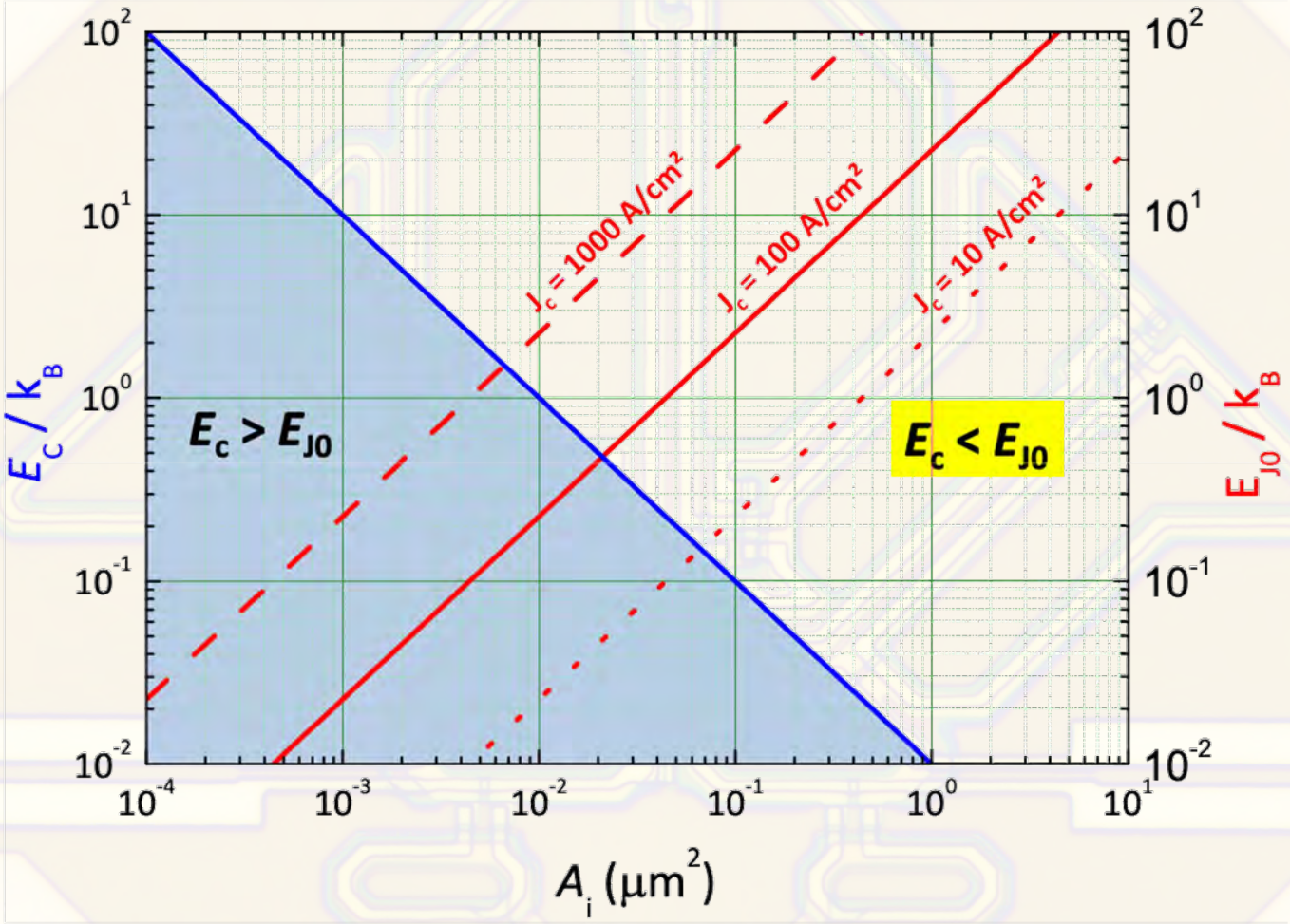
Constant Voltage steps in IVC of a JJ Driven With Microwave Radiation



overdamped

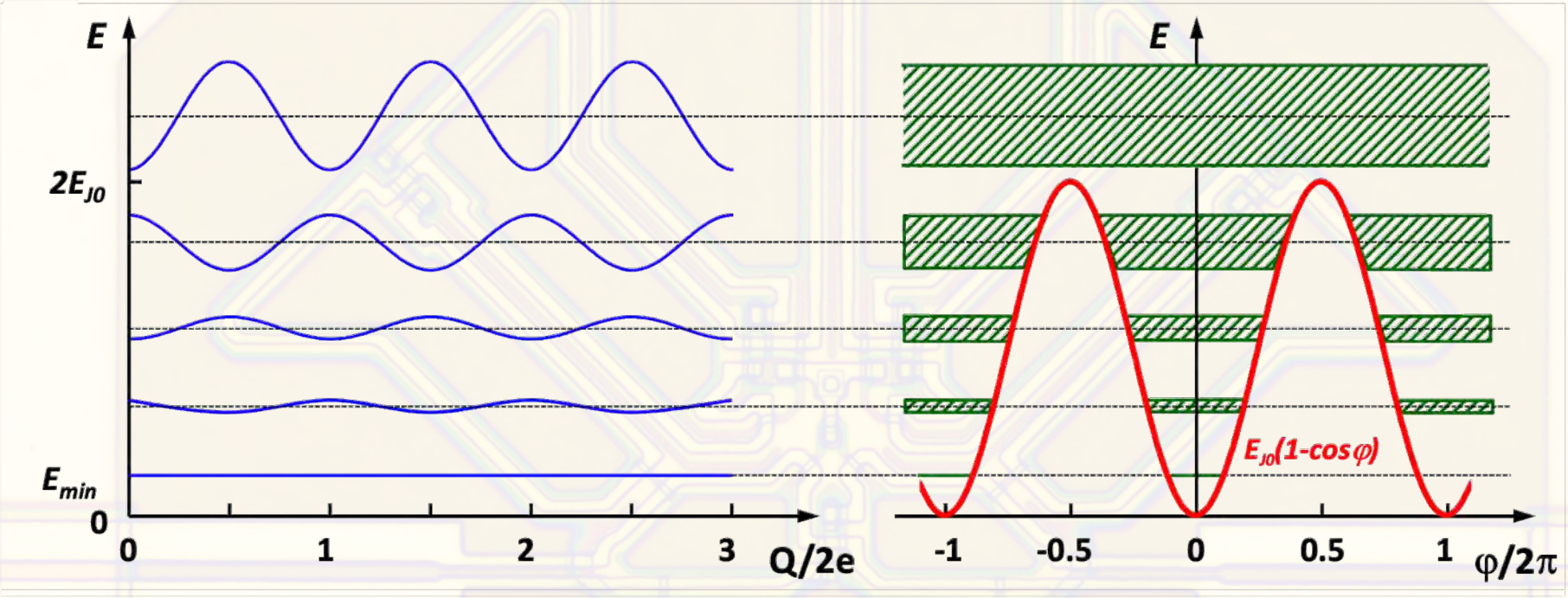
underdamped

Charging Energy and Josephson Coupling Energy as a Function of the Junction Area



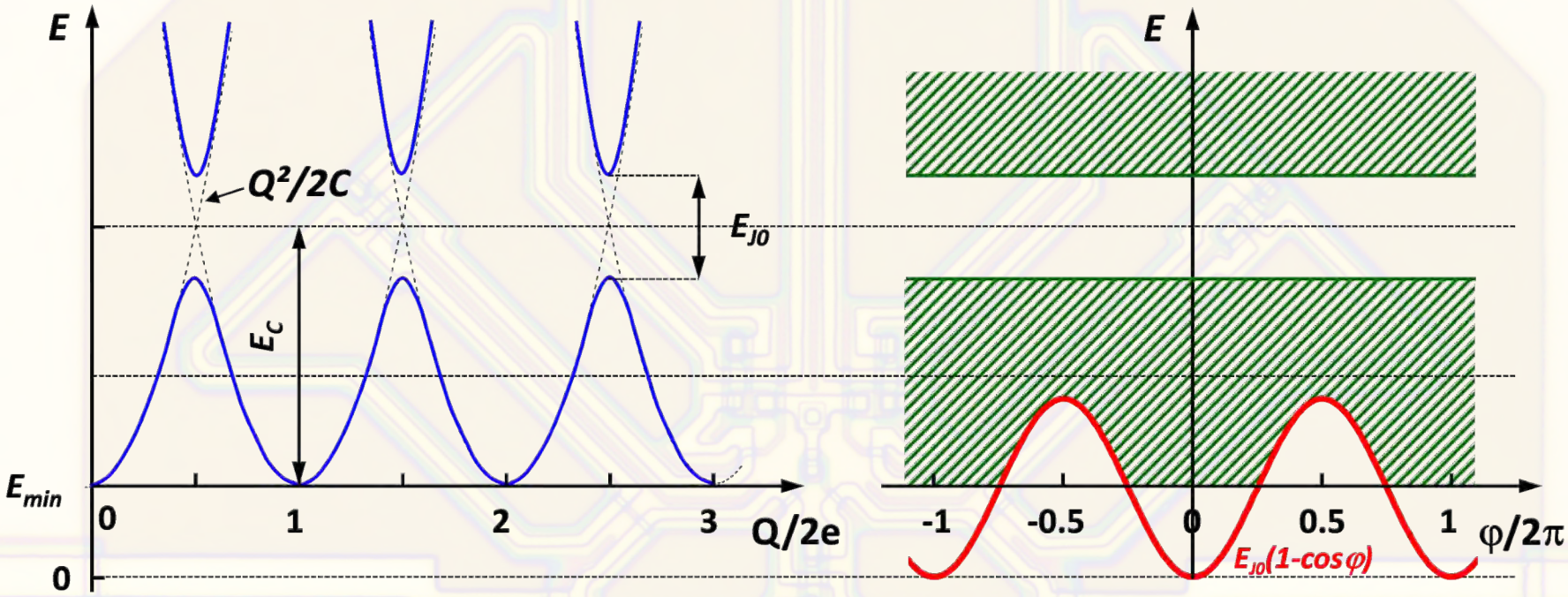
Energy Diagrams for an isolated JJ ($I = 0$) in Case of Low Damping

$$E_C/E_J^0 = 0.1$$

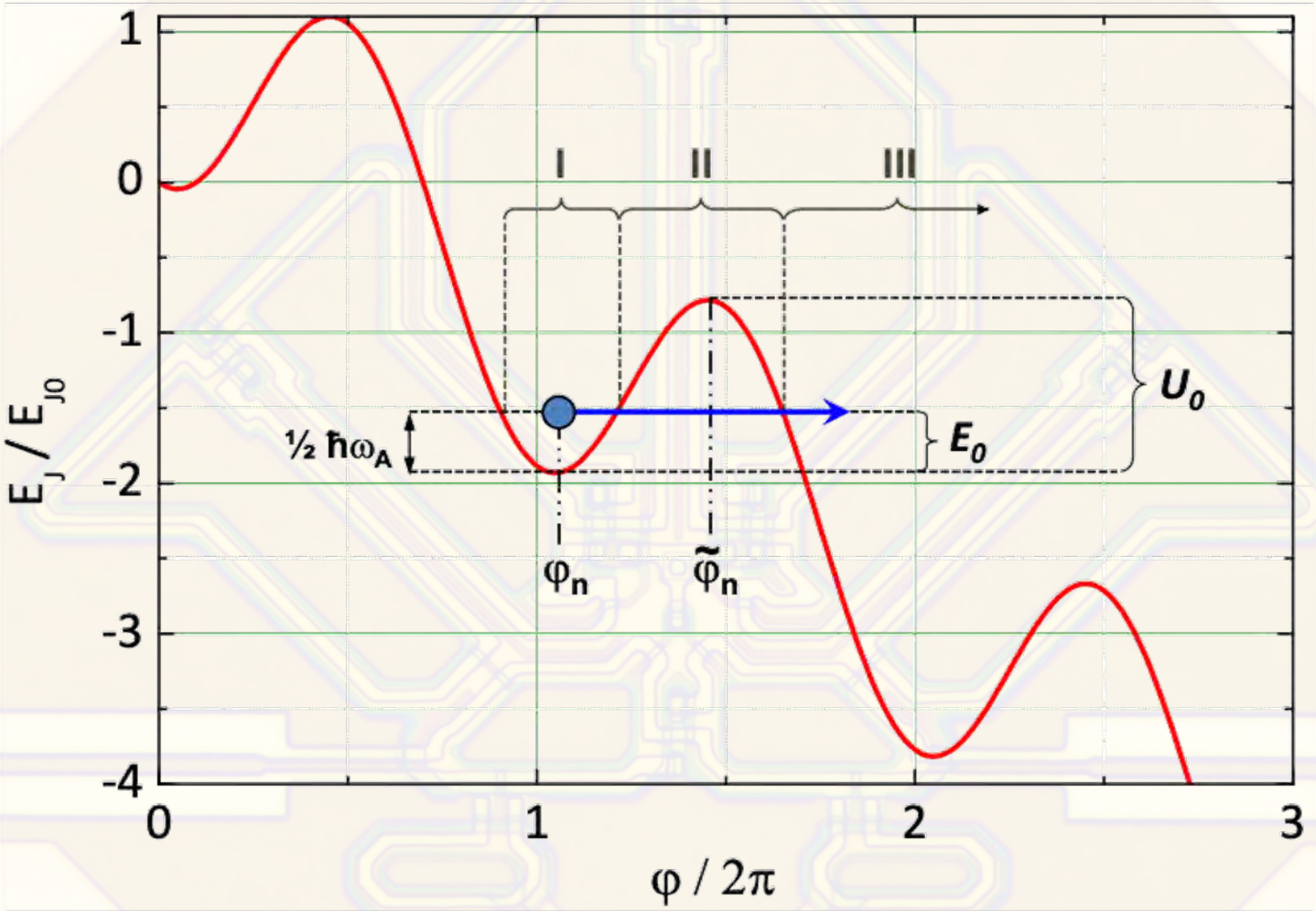


Energy Diagrams for an isolated JJ ($I = 0$) in Case of Low Damping

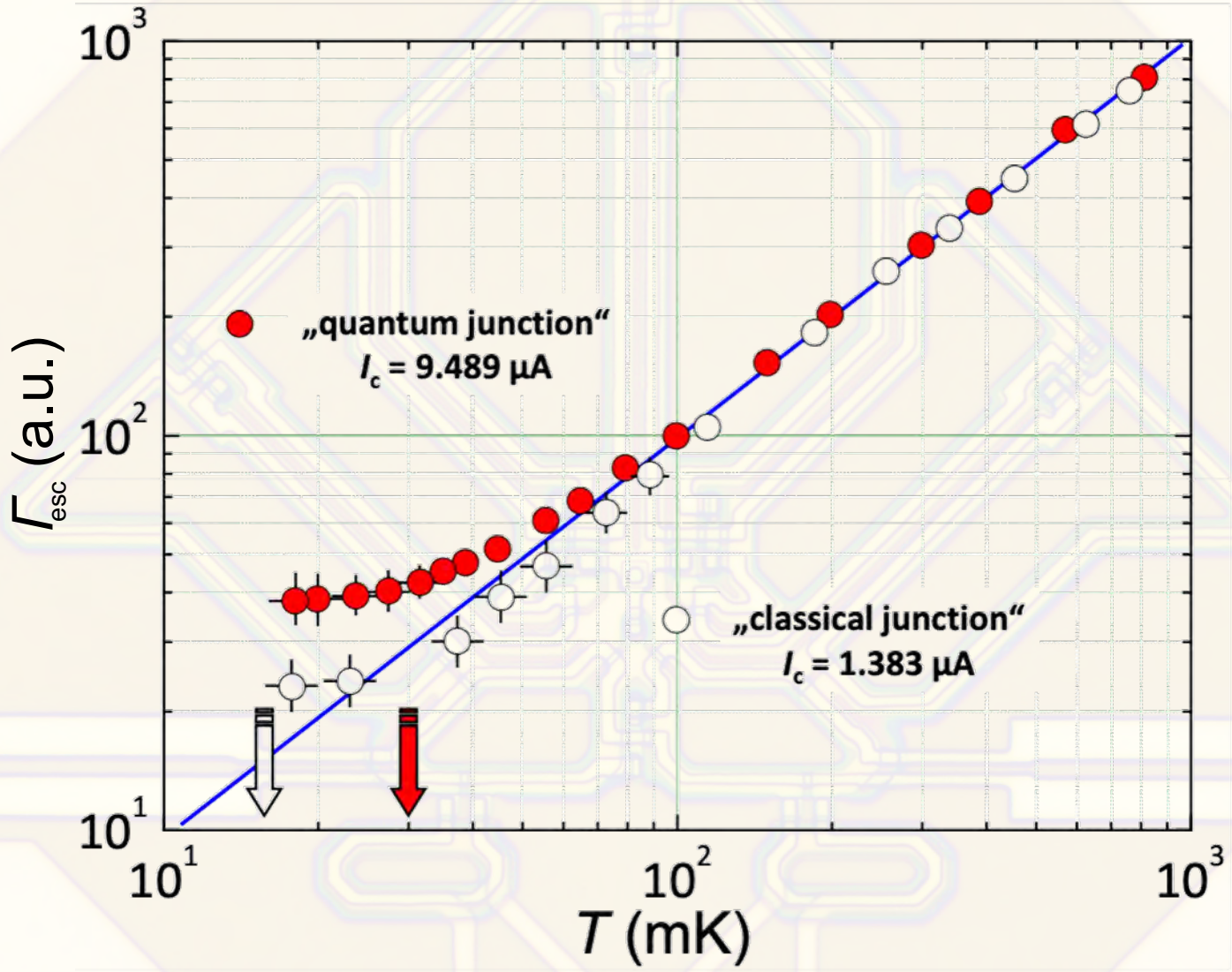
$$E_C / E_J^0 = 2.5$$



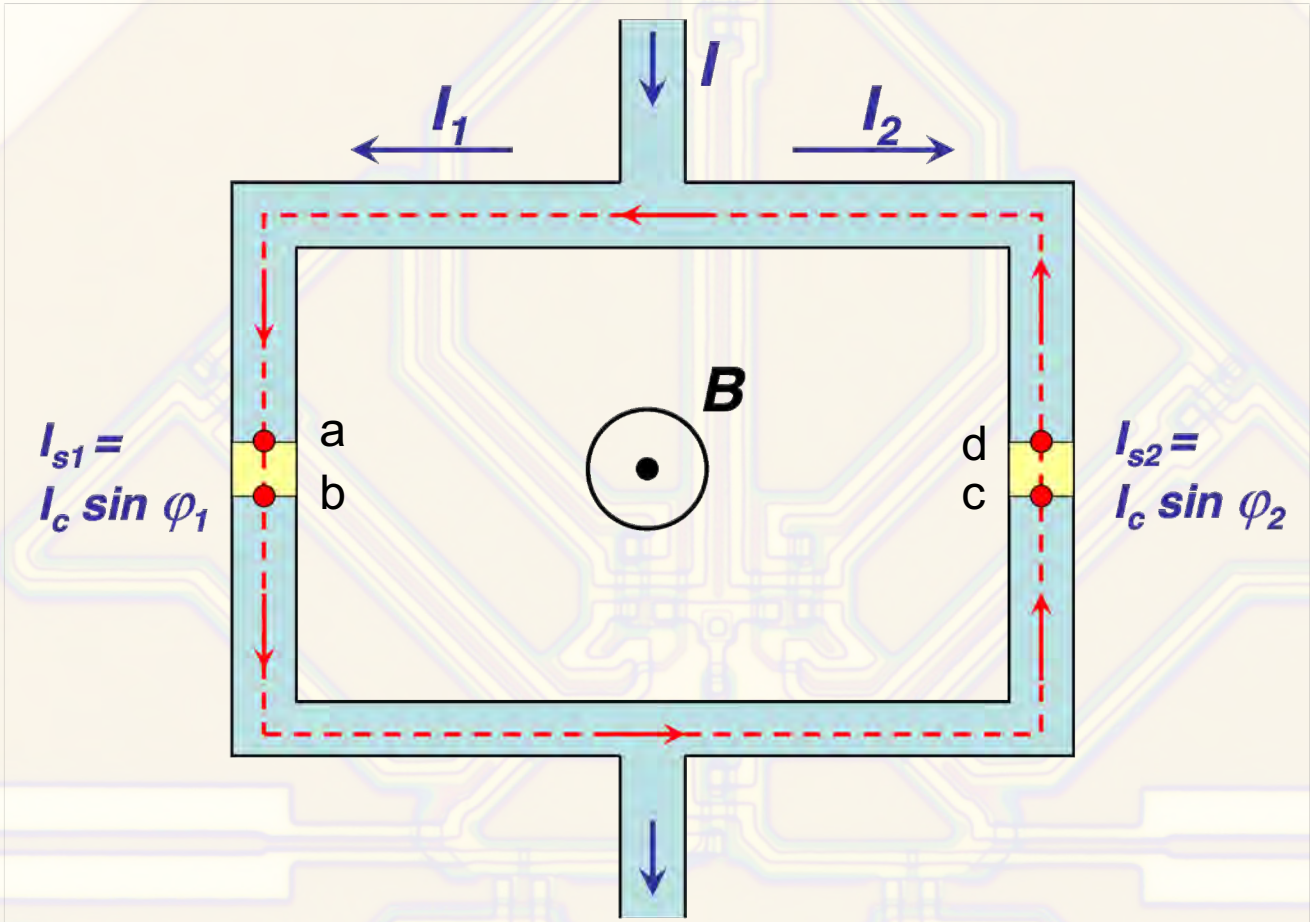
Macroscopic Quantum Tunneling



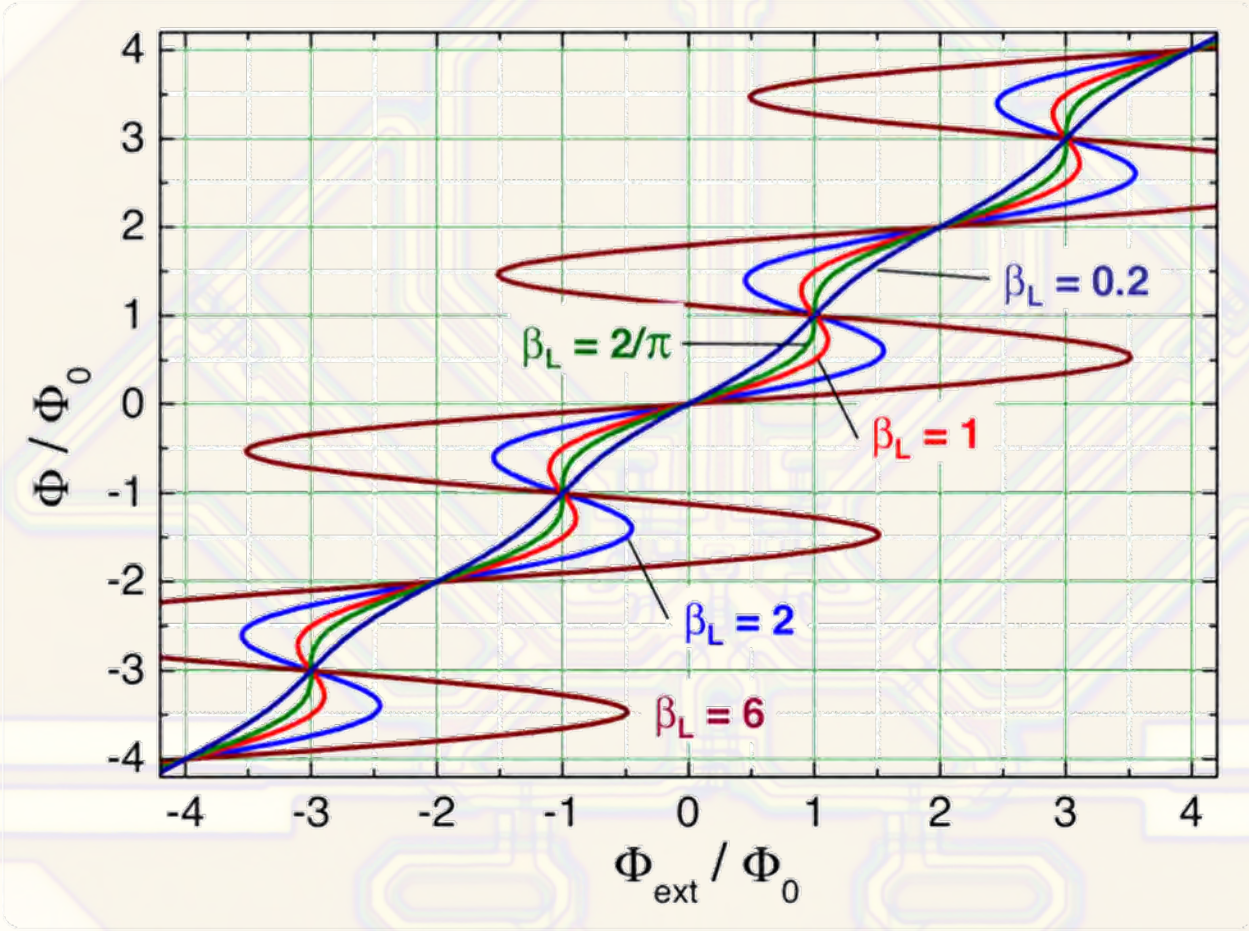
Escape Rate vs Temperature



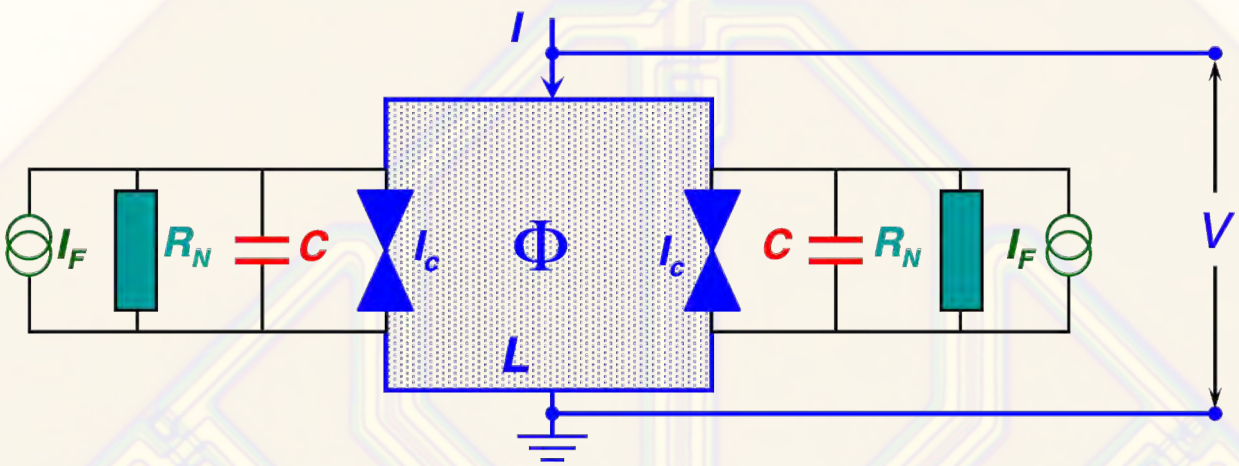
dc-SQUID Geometry

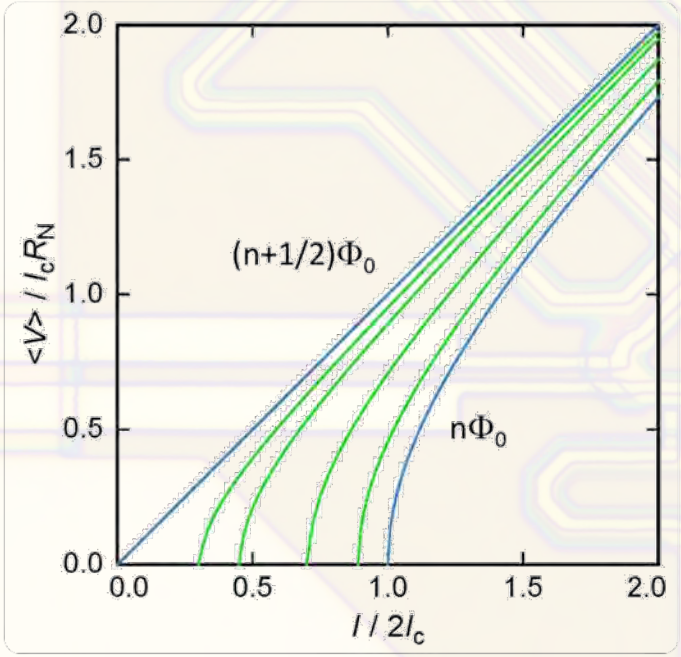


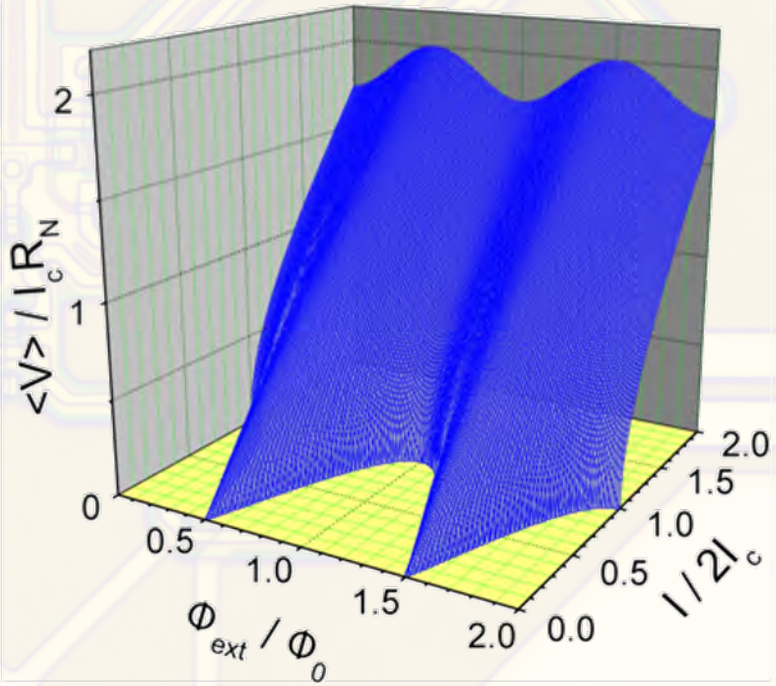
Φ vs Φ_{ext} for different β_L



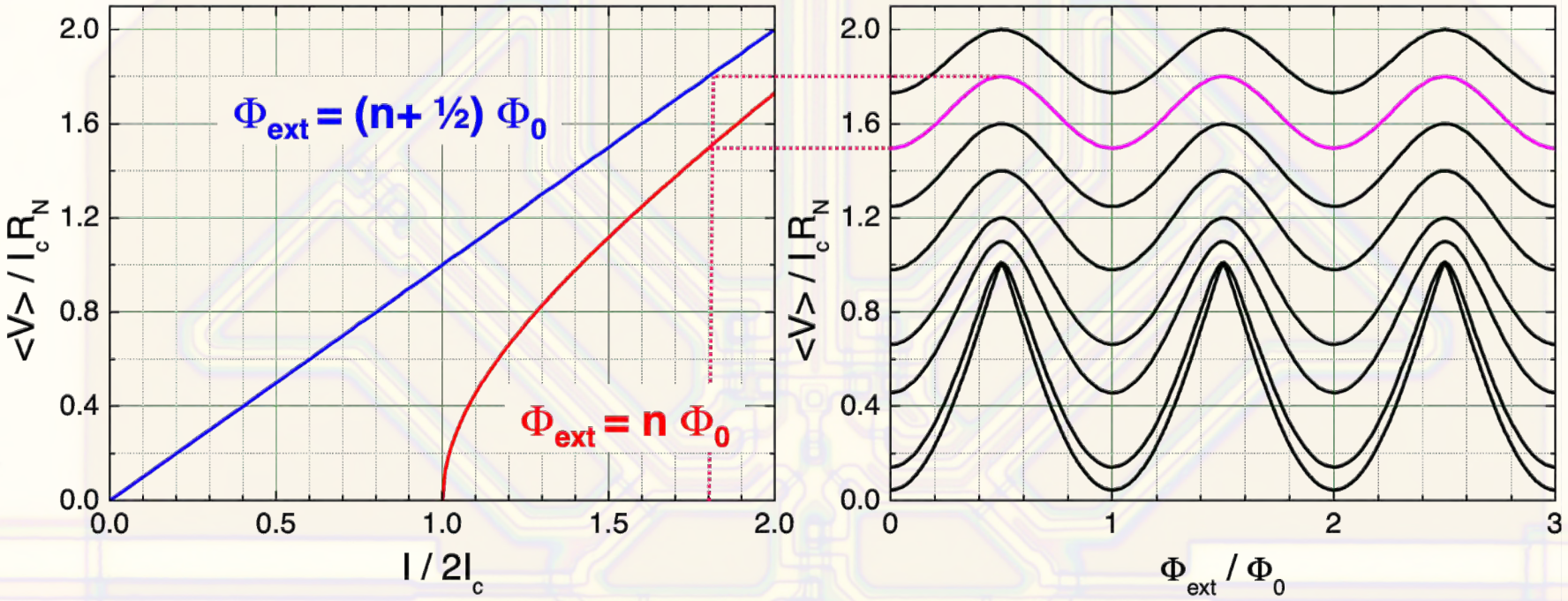
Voltage-Current-Flux Characteristics of a dc-SQUID



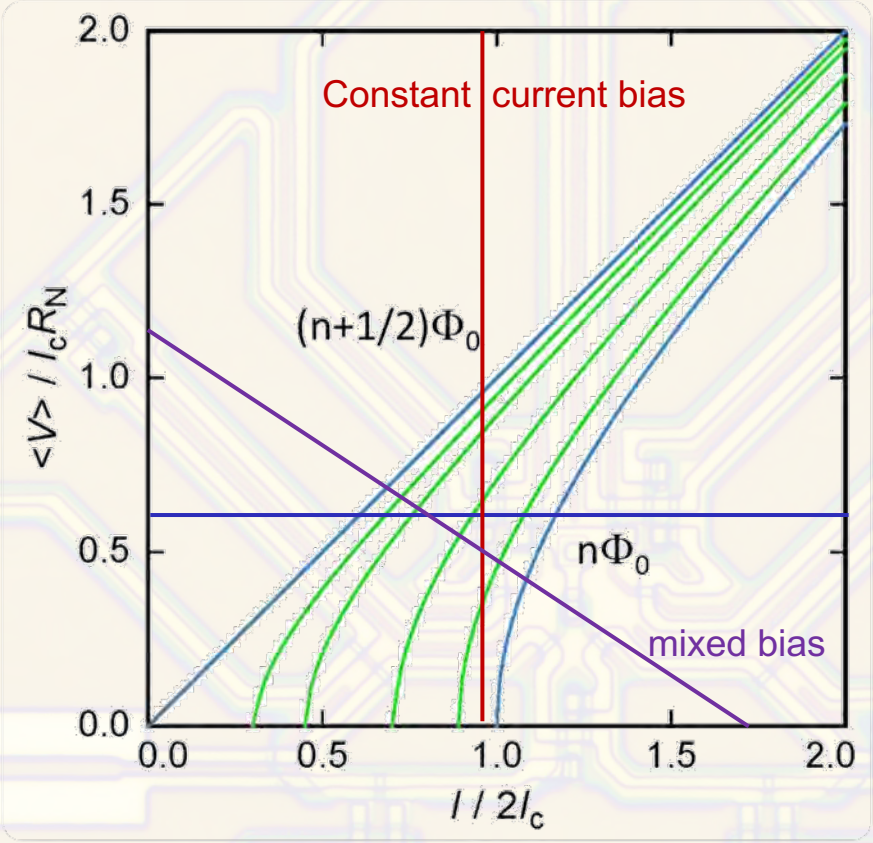




Voltage-Current and Voltage-Flux Characteristics of a dc-SQUID



Voltage-Current Characteristics of a dc-SQUID With Different Bias Conditions Indicated

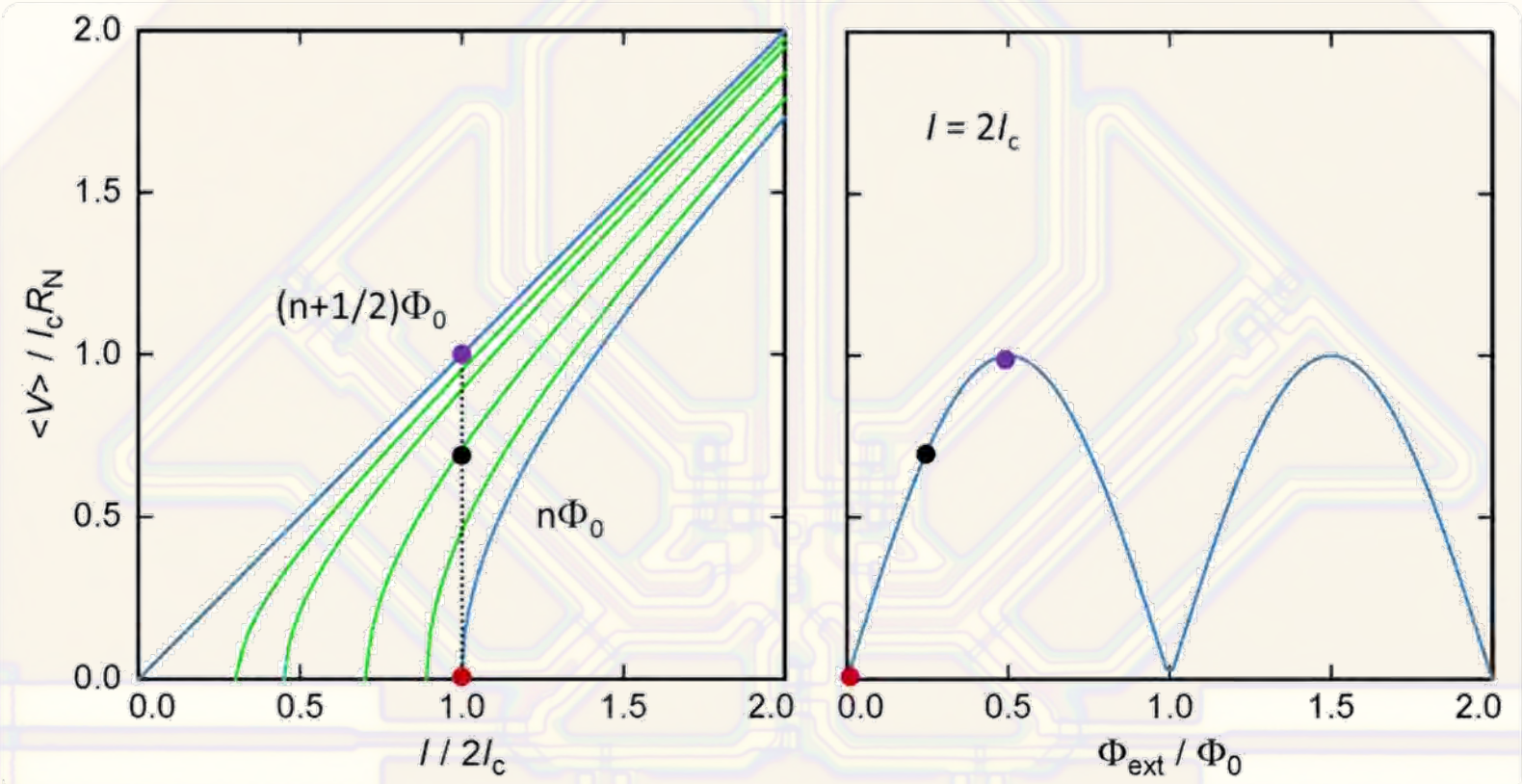


$\beta_C \approx 0$

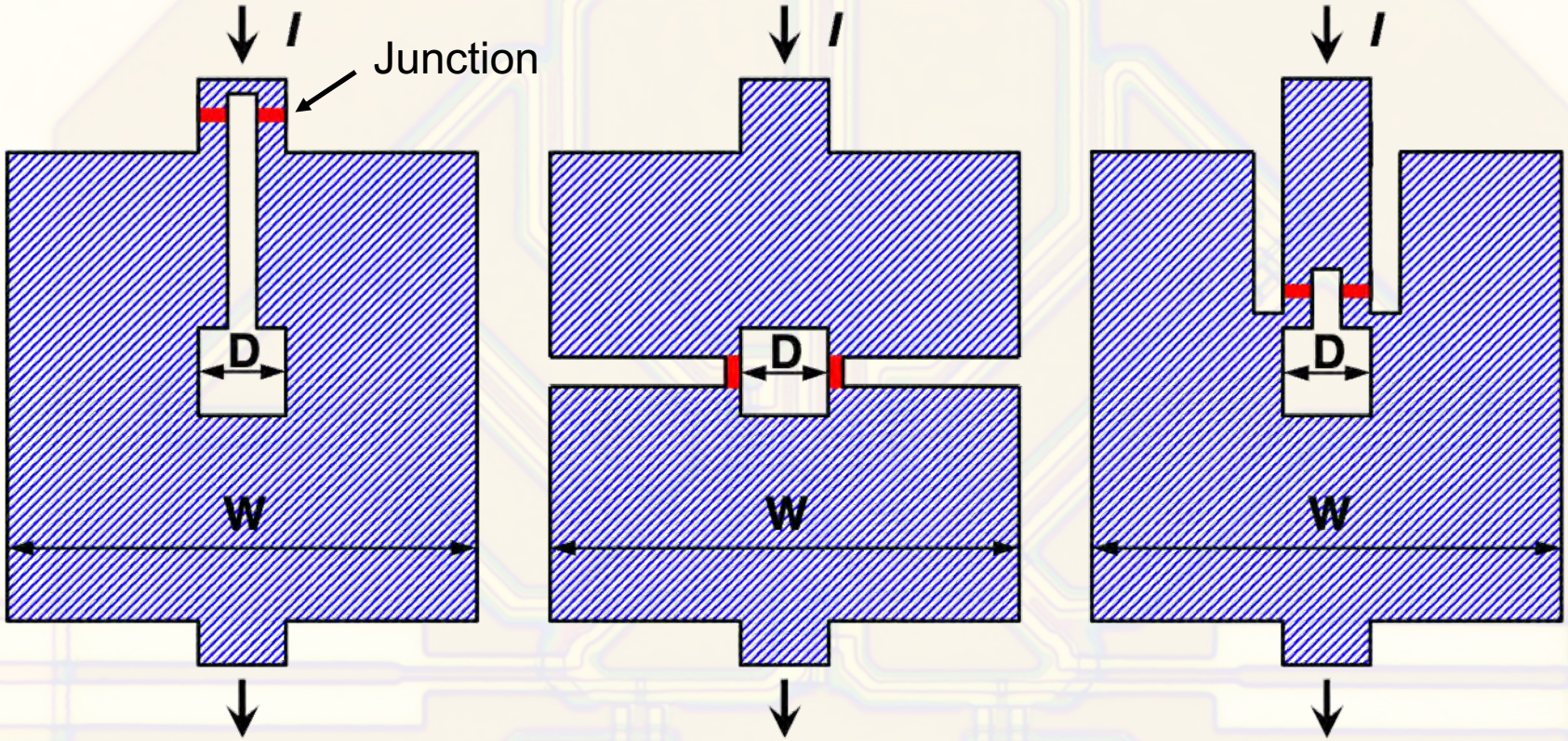
$\beta_L \approx 0$

$\gamma \approx 0$

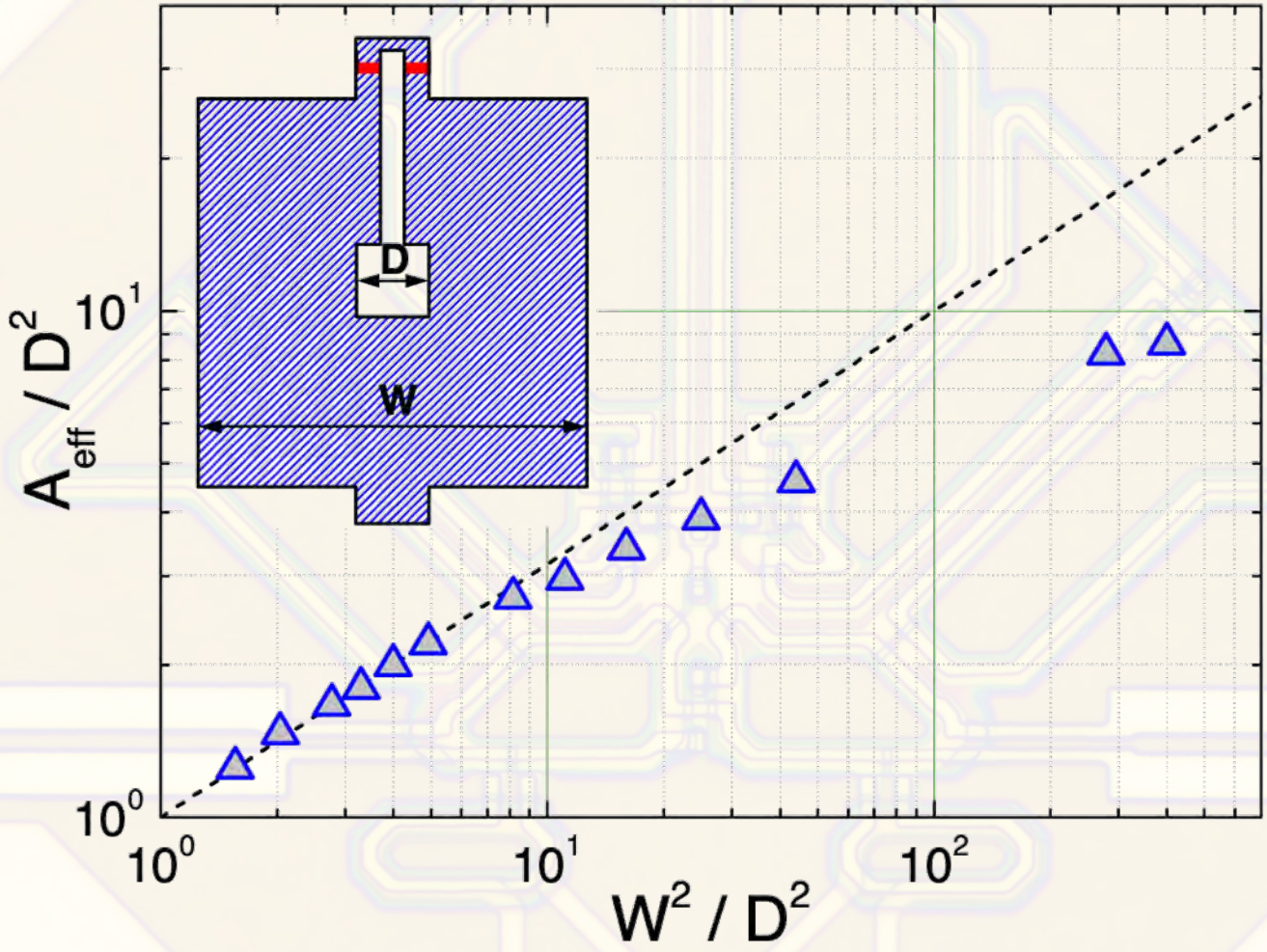
Voltage-Current Characteristics of a dc-SQUID



Washer-type dc-SQUID Geometries



Washer-type dc-SQUIDs



dc-SQUID With Input Coil