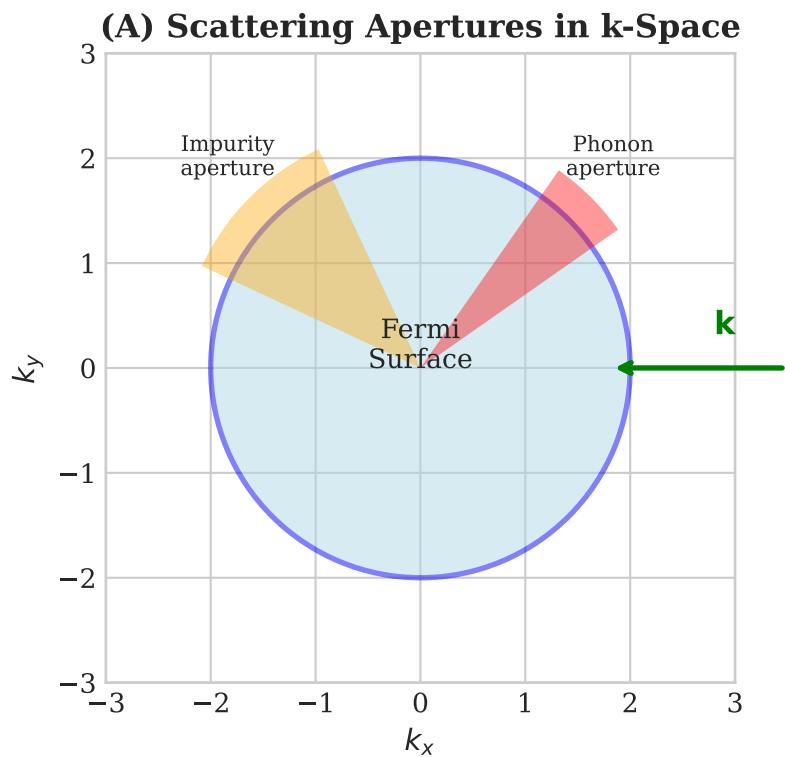
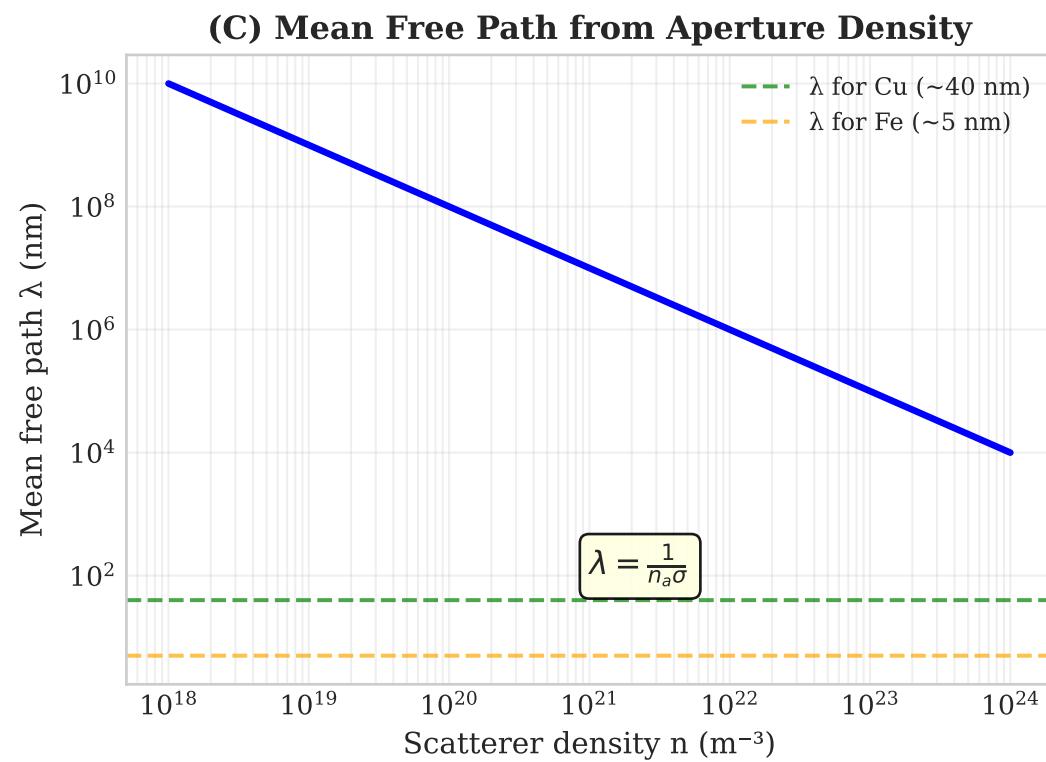


## Panel C-7: Lattice Scattering as Categorical Apertures



**(B) Scattering Types and Selectivities**

Scattering Type	Selectivity ( $s$ )	T-Dependence	$\lambda$ (nm)
Phonon	~0.1	$\propto T$	10-100
Impurity	~0.01	T-independent	1-10
Electron-electron	~0.5	$\propto T^2$	100-1000
Grain boundary	~0.001	Weak	0.1-1
Surface	~0.1	Complex	~film thickness



**(D) Resistance as Aperture Barrier Sum**

$$R = \sum_a \frac{\Phi_a}{T} = \frac{L}{A} \sum_a \frac{1}{s_a \tau_a}$$

*Resistance = Sum of aperture potentials*

A diagram showing a blue rectangular region representing a sample of length  $L$  and area  $A$ . Red 'X' marks along the top edge represent individual scatterers or aperture barriers. A green curve shows the potential barrier profile across the sample.

Each scatterer = aperture barrier