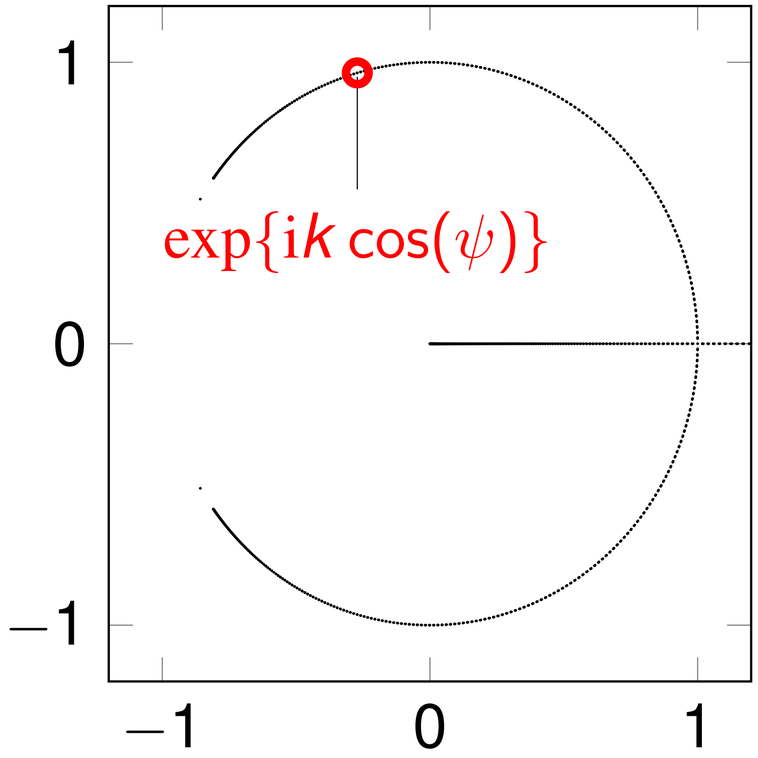
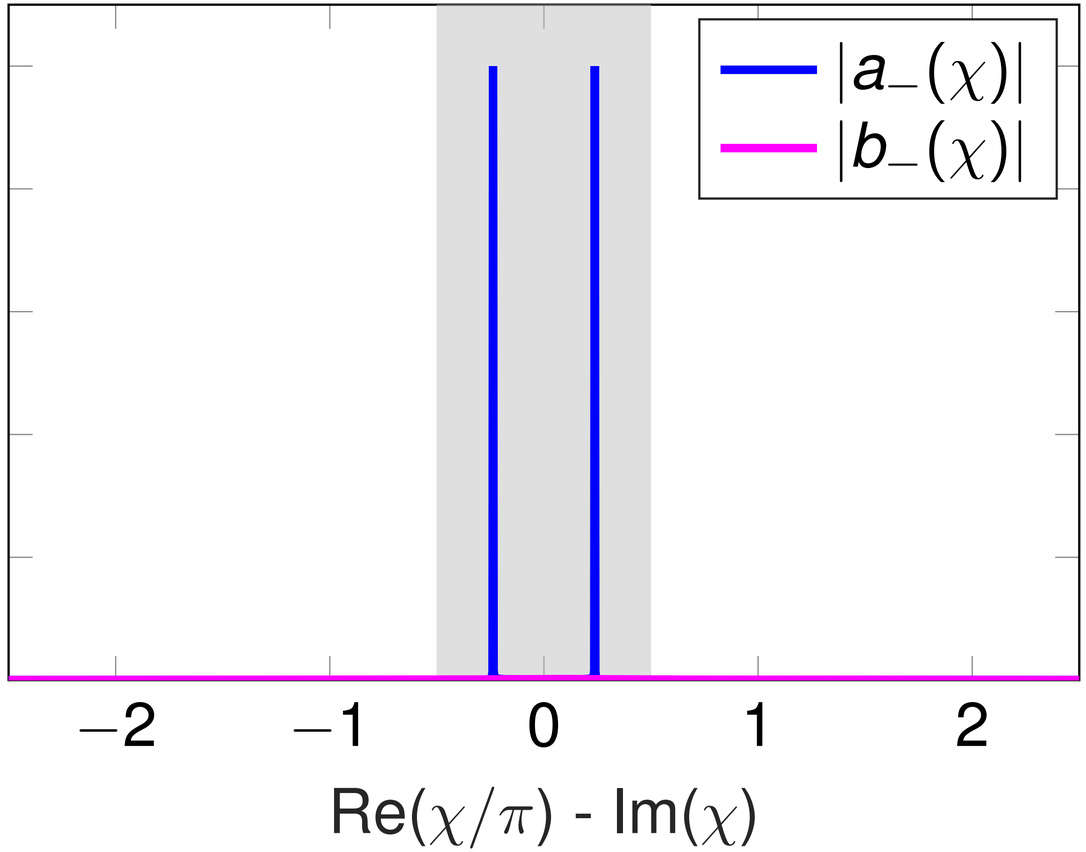
Transfer operator: Spectrum below cut-off

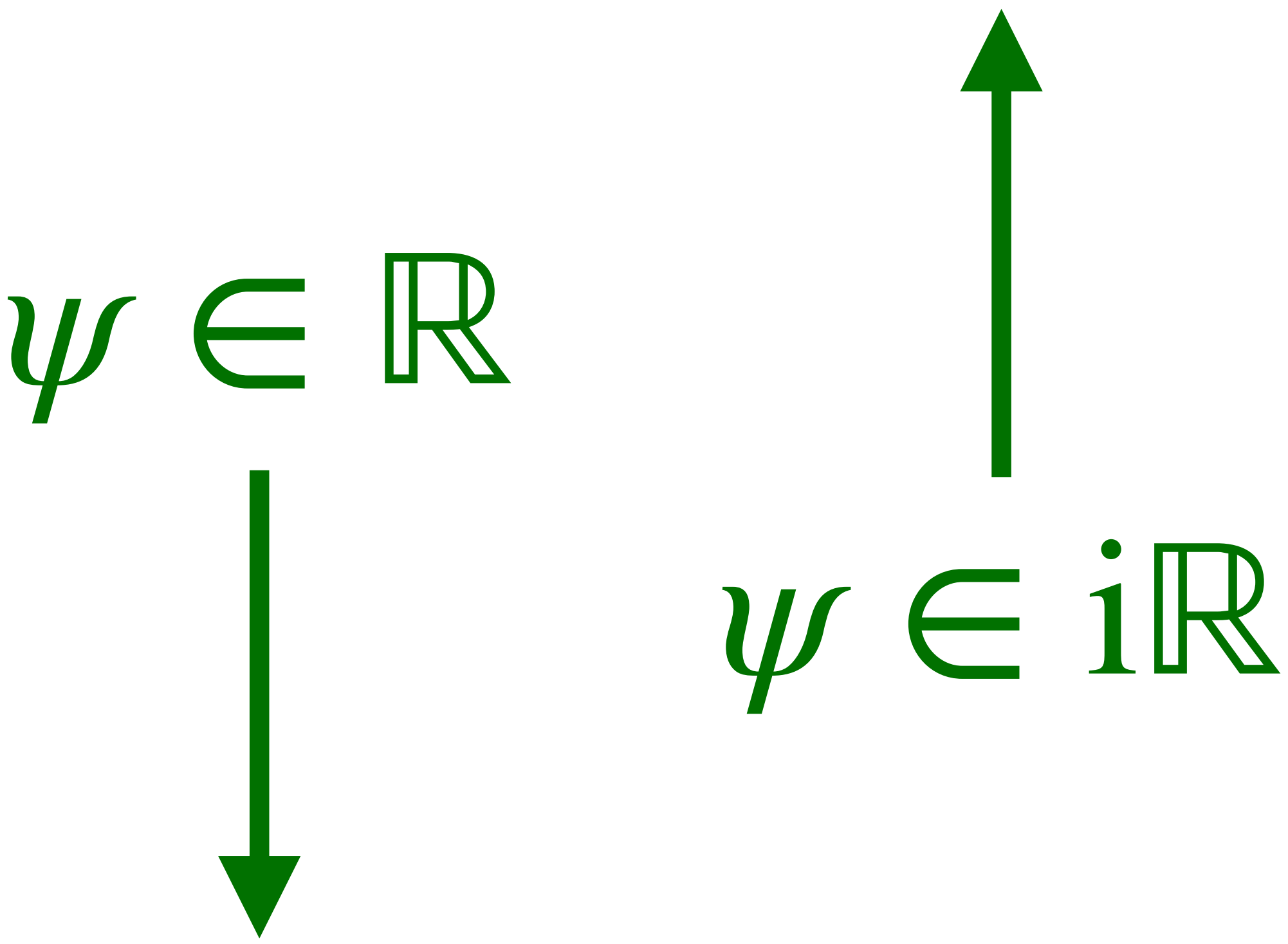
Example: $a = 0.25$; $k = 0.8\pi$

Eigenvalues $\in \mathbb{C}$



Eigenfunction

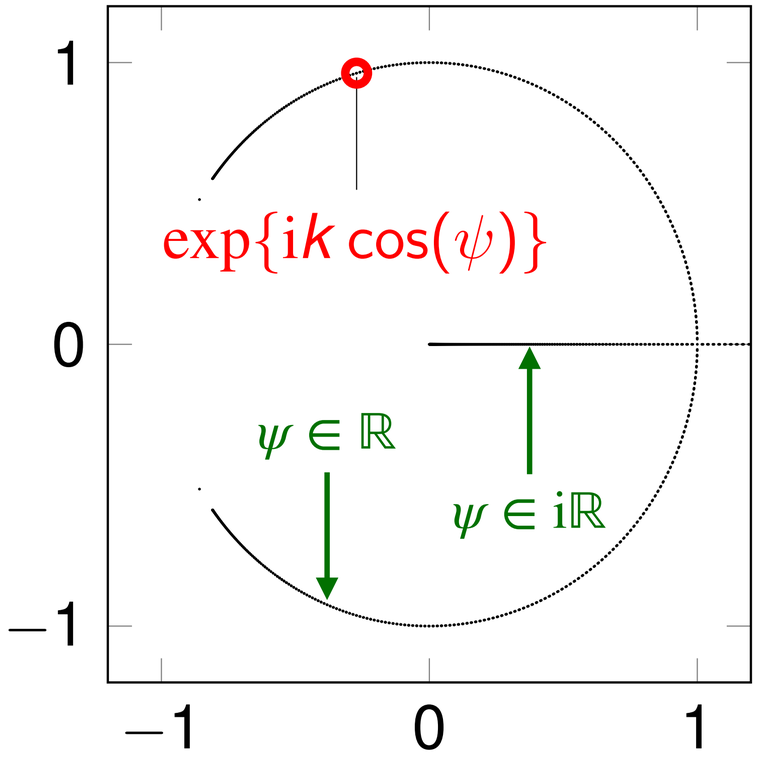



$\psi \in \mathbb{R}$
$\psi \in \mathrm{i}\mathbb{R}$

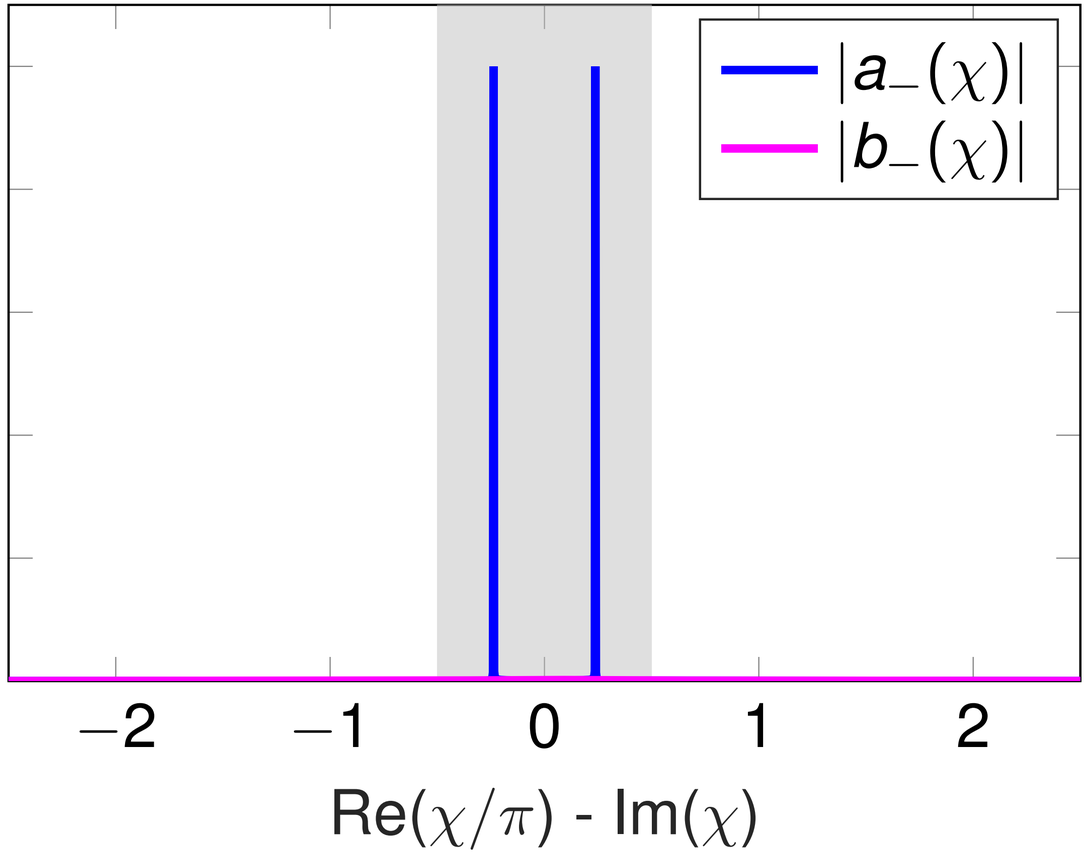
Transfer operator: Spectrum below cut-off

Example: $a = 0.25$; $k = 0.8\pi$

Eigenvalues $\in \mathbb{C}$



Eigenfunction



Rayleigh–Bloch waves create resonance (below cut-off)

Example: $a = 0.25$; $N = 9$; $\psi = 0$

- Use transfer operator to decompose directional spectrum in each channel.
- Retain Rayleigh–Bloch components only.
- Use to approximate cylinder loads.