Prep guide – Evanescence and conductors

Big picture goal – To learn how to model attenuating waves, with a special focus on evanescent waves and waves in conductors.

1) Explain physically why a wave can't simply terminate at an interface, even in situations involving total internal reflection.

2) How do we interpret a complex wavevector $\vec{\boldsymbol{k}}$? In particular, with what do we associate the real and imaginary parts?

3) How do we have to change the Maxwell equations and wave equation if we want to model wave propagation in a conductor?