If we apply enough voltage in the Millikan experiment, the current of electrons will stop. What happens to the current of electrons coming out of the metal if we instead apply the voltage in the other direction (starting from a situation where no voltage is applied)?

A) The current of electrons will increase.
B) The current of electrons will decrease.
C) The current of electrons will stay the same.
D) The entire apparatus will be destroyed
in a catastrophic explosion.

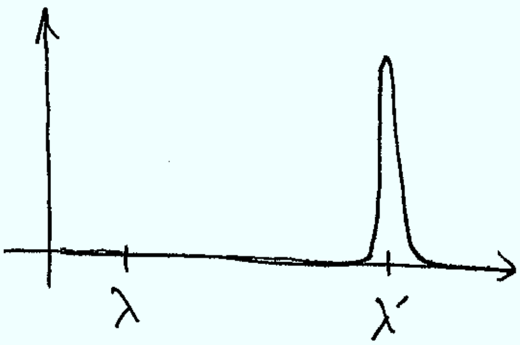
If we apply enough voltage in the Millikan experiment, the current of electrons will stop. What happens to the current of electrons coming out of the metal if we instead apply a small voltage in the other direction (starting from a situation where no voltage is applied)?

A) The current of electrons will increase.
B) The current of electrons will decrease.
C) The current of electrons will stay the same.
D) The entire apparatus will be destroyed
in a catastrophic explosion.

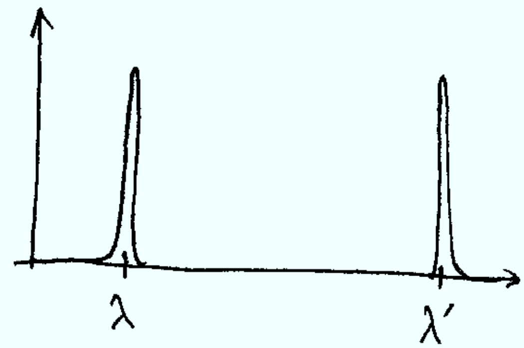
The current is determined by the number of photons hitting the metal per unit time, which remains the same here. With a positive voltage, all the electrons still make it to the other side.

In an actual Compton Effect experiment, some of the light also scatters off the nuclei, and the electrons in the metal have random velocities (i.e. are only at rest on average). If we measure the intensity of scattered light *at a fixed angle* as a function of wavelength, what would expect to observe (see next page):

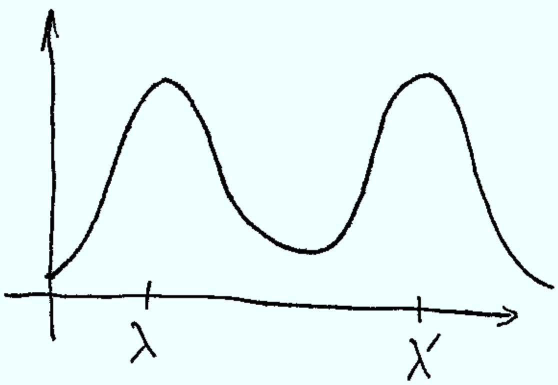
A)



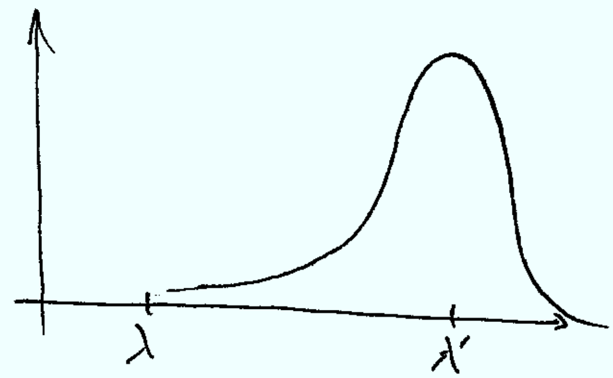
B)



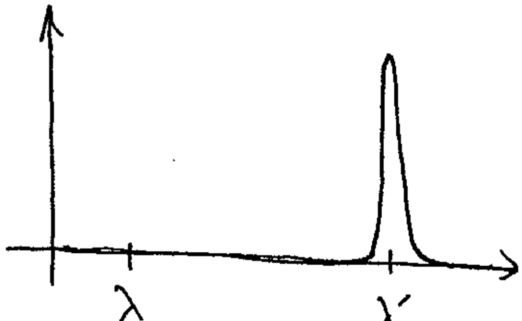
C)



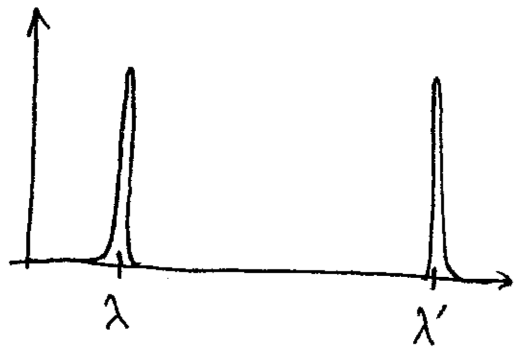
D)

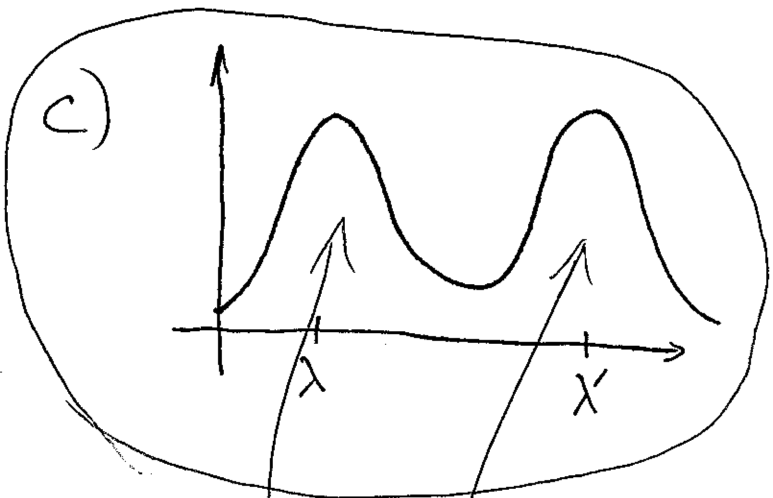


A)

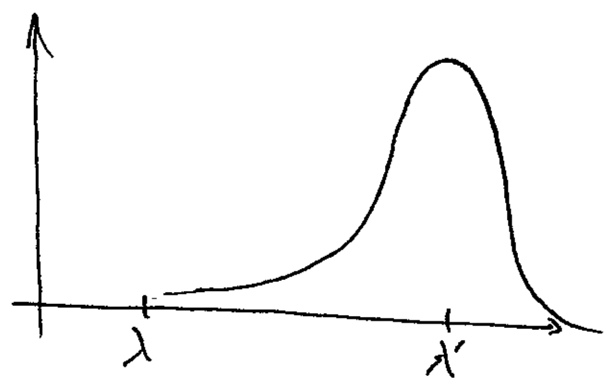


B)





D)



scattered from nuclei

shift $\frac{h}{Mc}$ v. small

scattered from electrons

→ range of λ's since different velocities for electrons