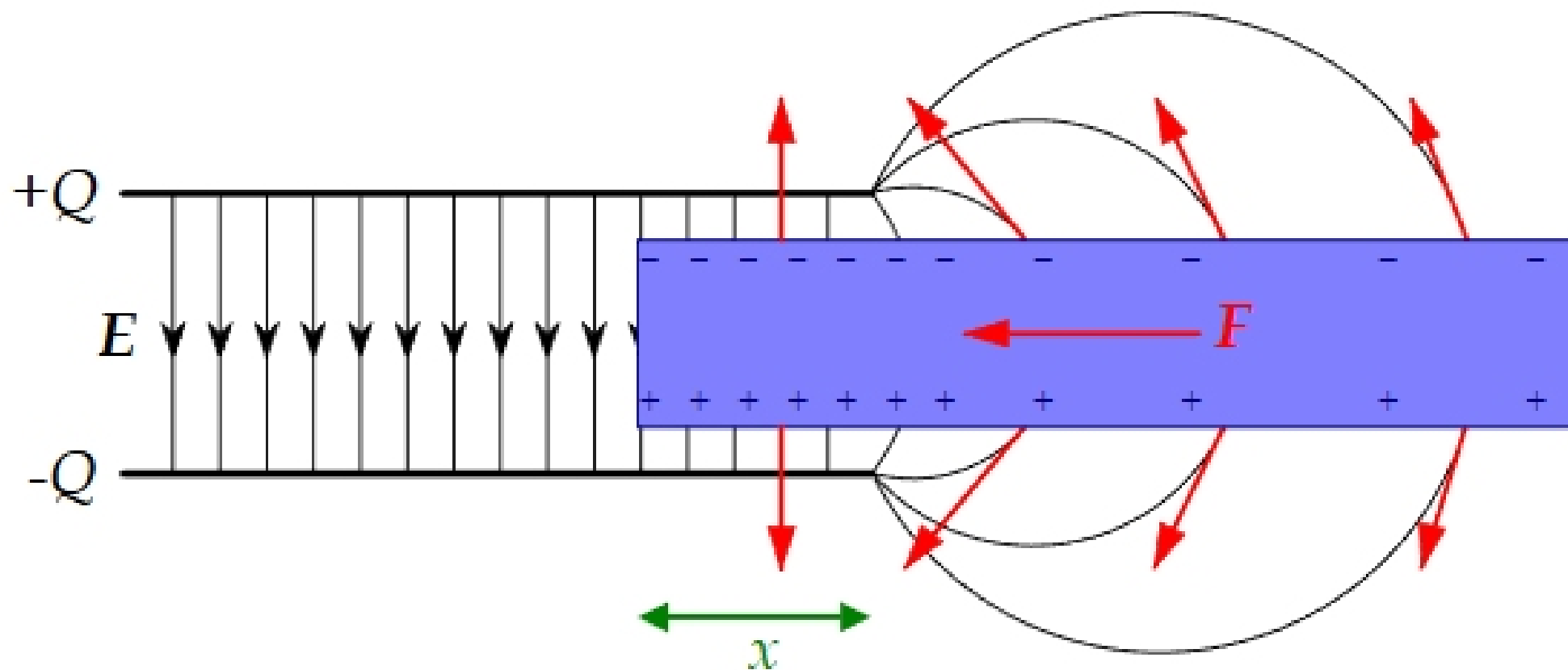


---

# Today in Physics 217: charges in motion

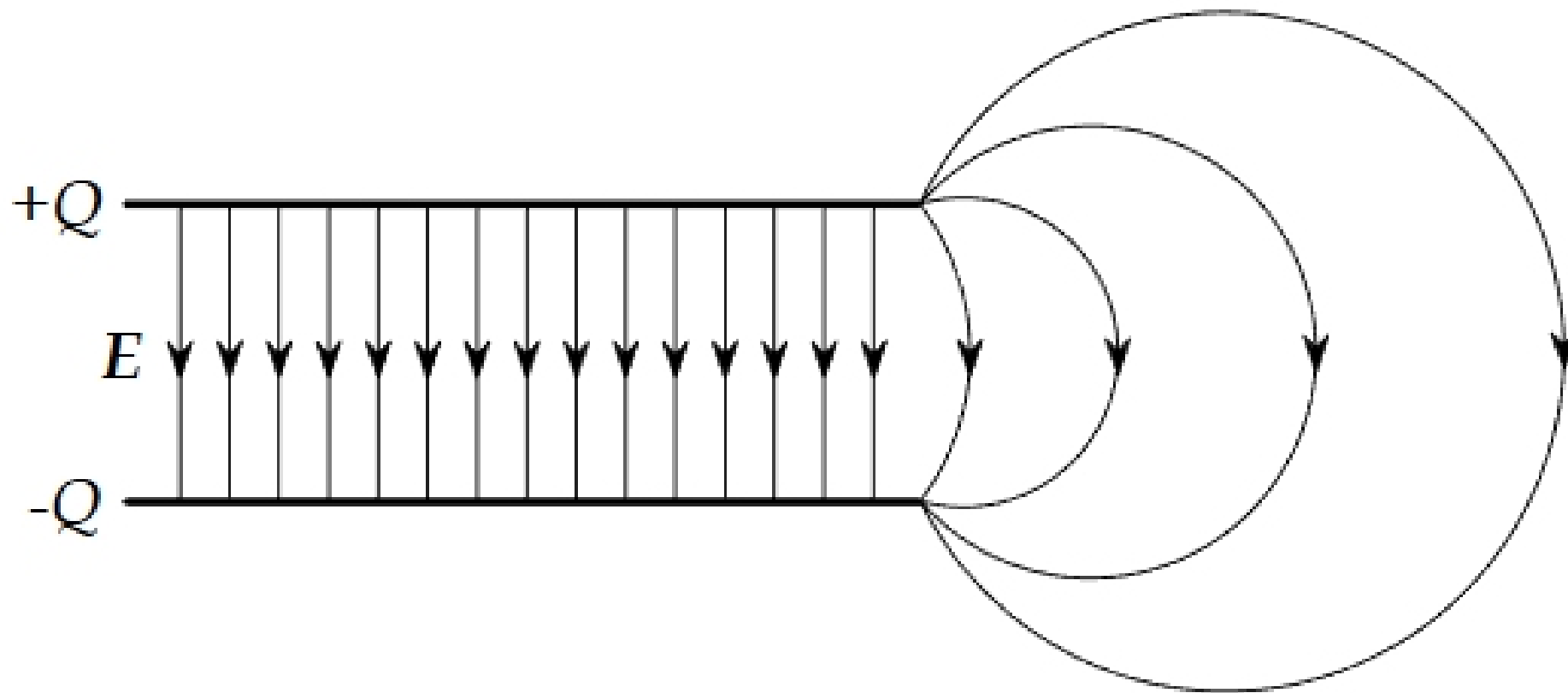
- Forces on dielectrics: an electrostatic pump
- Currents
- Magnetic forces on point charges and currents



---

## Force and work on dielectrics

A real parallel-plate capacitor – one with finite-size plates – has an electric field that extends past its boundaries. The field past the edges is called the fringing field.



---

## Force and work on dielectrics (continued)

A dielectric slab inserted part-way into the capacitor is polarized by the field, and the bound charge experiences forces exerted by the fringing fields that push the dielectric further into the capacitor. What is the force?

