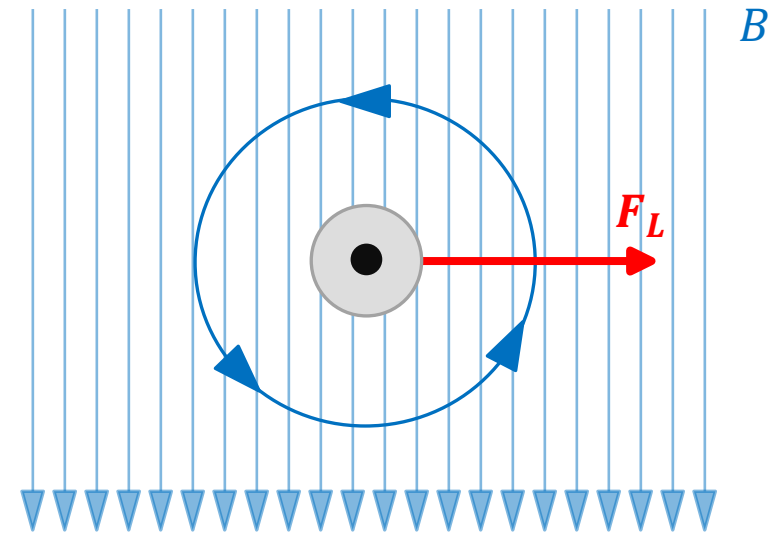
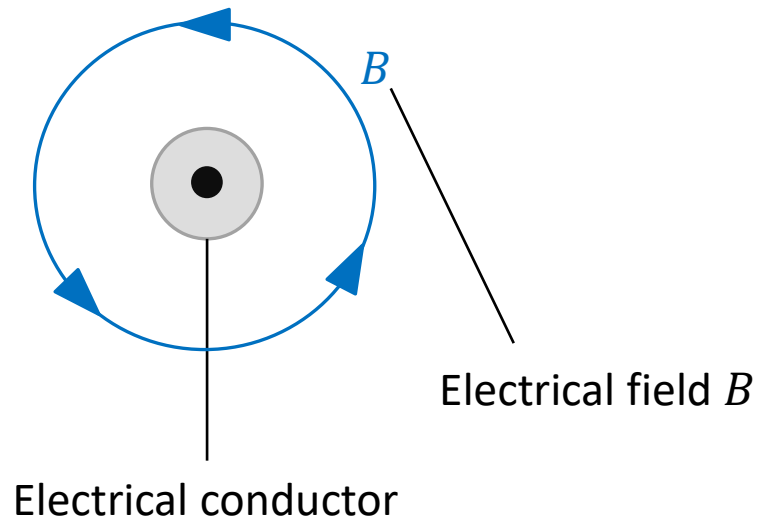


Inductionmotor

PHYSICAL BASICS

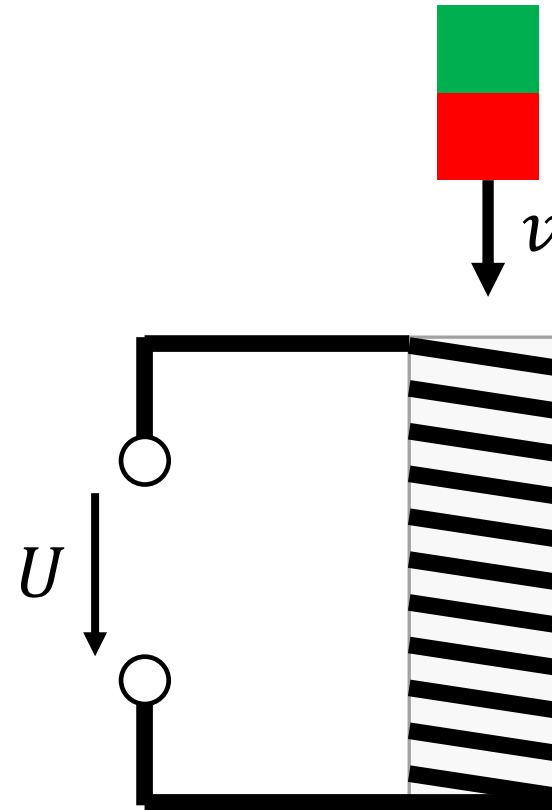
Lorentz-Force

- electrical charges moving through a conductor (here out of the drawing plane) cause an electrical field B as shown in the left figure below
- electrical charges moving through a magnetic field B causes a force on the charge carrier as shown in the right figure below



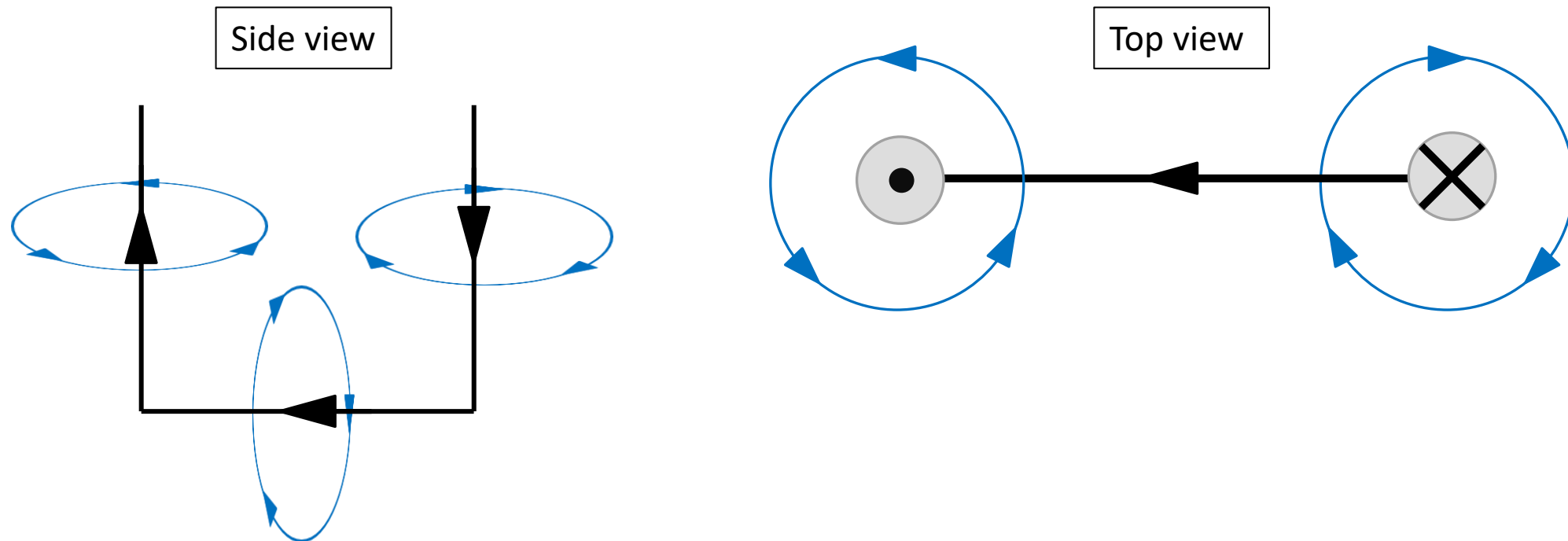
Electrical Induction

- A change in the magnetic field leads to the creation of an electrical field, which causes movement of electrical charges
- the figure on the right shows a simple example for this principle
- when the magnet is moving through the spool it induces a Voltage U on the circuit



Stator field

- By arranging an electrical conductor in a way described in the figures below two electrical fields with opposing directions of rotation are created



Stator-Rotor interaction

- Adding a second conductor **B (Rotor)** to the conductor from the previous page A (Stator)
- Adding a rotatory axis
- Changing the current of conductor A changes the magnetic fields B it creates
- These magnetic field changes induce a current in conductor B
- The moving charges in conductor B lead to Lorentz force F_L which leads to a rotation movement

