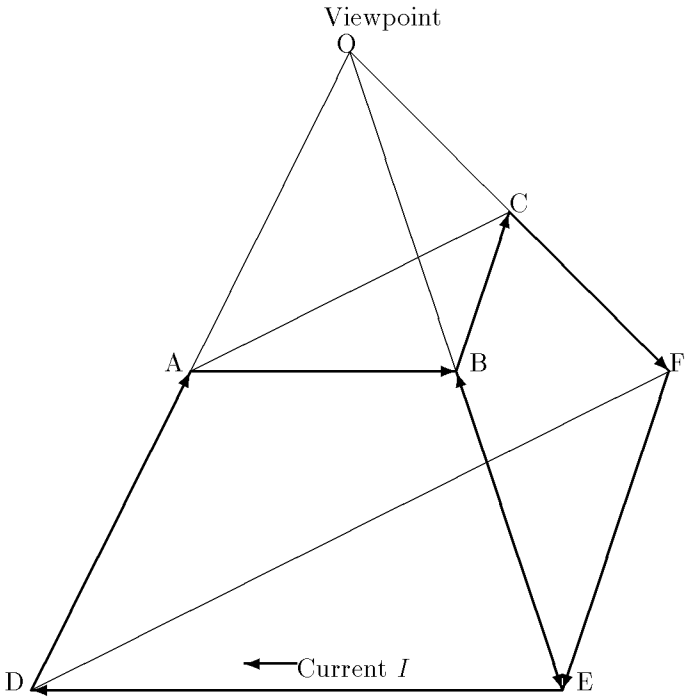

Figure 2: Explanation of magnetic potential

B.5 Electrostatic, electromagnetic and symmetrical unit systems

Looking at Figure 1, deriving the dimension of impedance from length and time, we can see that it is possible to reduce the number of independent dimensions by one by reorganizing the dimensions of electromagnetic quantities.[12] Electrostatic, electromagnetic, and symmetrical unit systems can be positioned as unit systems for which this kind of reorganization has been carried out.

1. Electrostatic unit system
   This is the unit system in which Ω_n is set to c_0^{-1} so that the coefficient on the right side of the formula for the force acting between electrical quantities becomes the pure number 1, and the $(\Omega_n c_0)^{1/2}$ multiples of the quantities of the center column and right-hand column in Figure 1 become the newly defined quantities of the center column and right-hand column, and the $(\Omega_n c_0)^{-1/2}$ multiples of the quantities of the left column become the newly defined quantities of the left-hand column. Thus, the electric flux density/electric field strength = solid angle. The formula set of the electrostatic unit system is the formula set of section B.3 in which $\epsilon_0 = \mathrm{sr}$. Thus, if sr is set to the pure number 1, then ϵ_0 becomes the pure number 1.
2. Electromagnetic unit system
   This is the unit system in which Ω_n is set to c_0 so that the coefficient on the right side of the formula for the force acting between electrical currents becomes the pure number 2, and the $(\Omega_n/c_0)^{1/2}$ multiples of the quantities of the center column and right-hand column of Figure 1 become the newly defined center and right-hand column quantities, and the $(\Omega_n/c_0)^{-1/2}$ multiples of the quantities of the left-hand column become the newly defined left-hand column quantities. Thus, the magnetic