

flux density/magnetic field strength = solid angle⁻¹. The formula set of the electromagnetic unit system is the formula set of section B.3 in which $\mu_0 = \text{sr}^{-1}$. Thus, if sr is set to the pure number 1, then μ_0 becomes the pure number 1.

3. Symmetrical unit system

This is the unit system in which, in the electrostatic unit system, the magnetic flux and magnetic flux density are replaced by the c_0 multiples of the magnetic flux and magnetic flux density and the magnetic potential and magnetic field strength are replaced by the c_0^{-1} multiples of the magnetic potential and magnetic field strength,¹⁴ so that electric flux density/electric field strength = solid angle and magnetic flux density/magnetic field strength = solid angle⁻¹. The formula set of the symmetrical unit system is the formula set of section B.3 in which $\epsilon_0 = \text{sr}$ and A and B are everywhere replaced by $c_0^{-1}A$ and $c_0^{-1}B$, and H is everywhere replaced by c_0H . Thus, if sr is set to the pure number 1, then ϵ_0 and μ_0 become the pure number 1.

B.6 Conclusion

The positioning of the existing unit systems, when starting from the standpoint of regarding solid angle as a physical quantity that has an independent dimension is summarized in Table 4. According to that positioning, the relationship between the rationalized unit system and the non-rationalized unit system and the relationship between the ternary unit systems and the quaternary unit system are concisely organized. In addition, the understanding of the relationships among the dimensions of the electromagnetic quantities brought about by Figure 1 is probably useful from an educational standpoint.

Table 4: Positioning of the existing unit systems

No. of dimensions	Name	Position
3	CGS electrostatic CGS electromagnetic CGS Gaussian symmetrical	$\text{sr} = \text{the pure number 1}, \Omega_n = c_0^{-1}$ $\text{sr} = \text{the pure number 1}, \Omega_n = c_0$ $\text{sr} = \text{the pure number 1}, \Omega_n = c_0^{-1}$, However the upper left and lower right of Figure 1 are corrected by c_0
4	MKSA system	$\Omega_2 = \text{the pure number 1}$

¹⁴ That is to say, dimensioned quantities of the electromagnetic unit system are used for these.