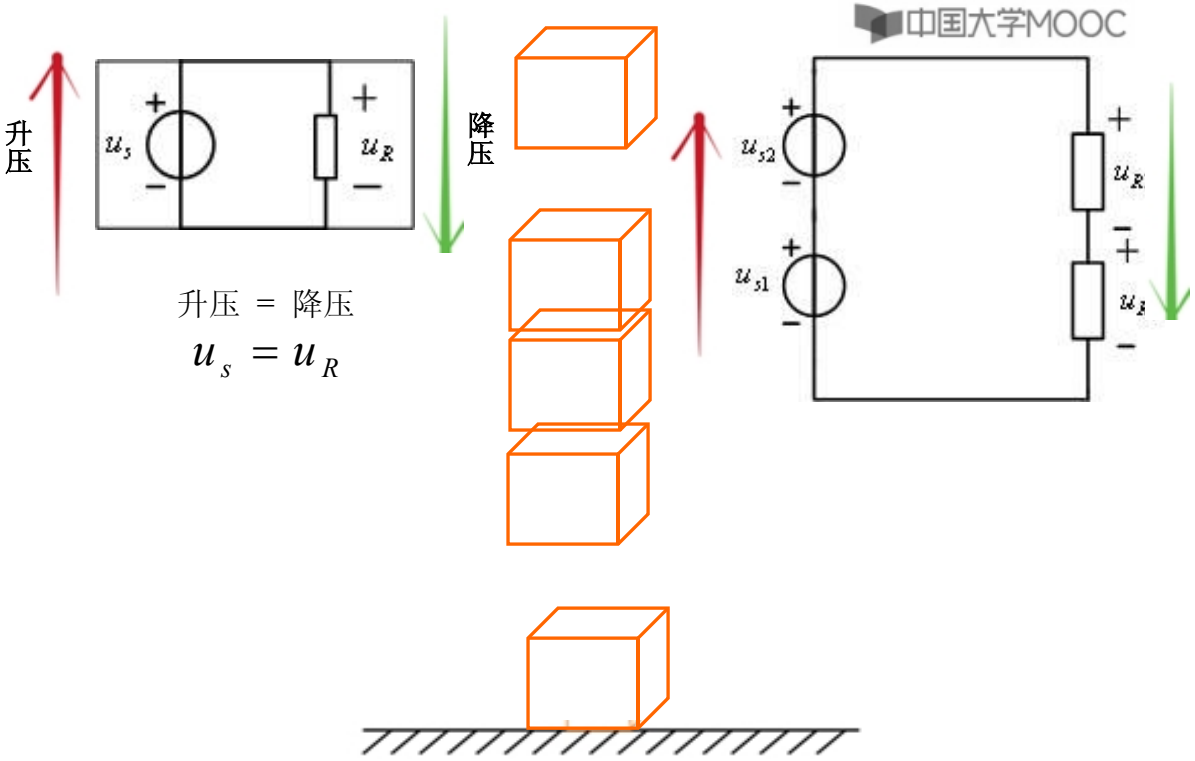
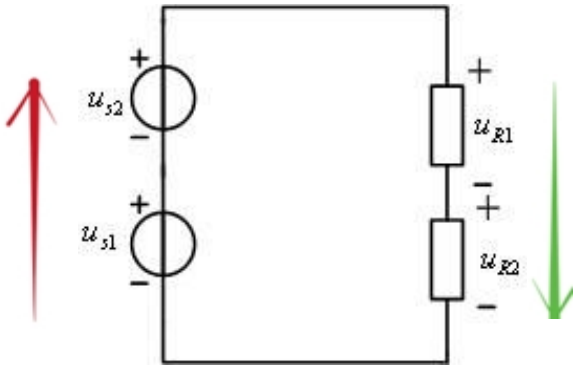
1-9 基尔霍夫电压定律



升压 = 降压

$$u_s = u_R$$

电场力做功与路径无关，这类似于重力作功与路径无关



基尔霍夫电压定律（KVL）

在电路中，任一时刻，

沿任一回路绕行，

各支路电压的代数和等于零。**形式 1**

$$\sum_{k=1}^{m}(+or-)u_k = 0$$

形式 2 升压= 降压

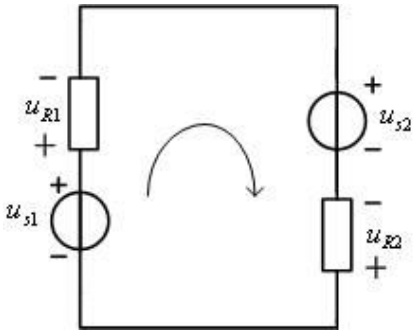
$$u_{s1}+u_{s2}=u_{R1}+u_{R2}$$

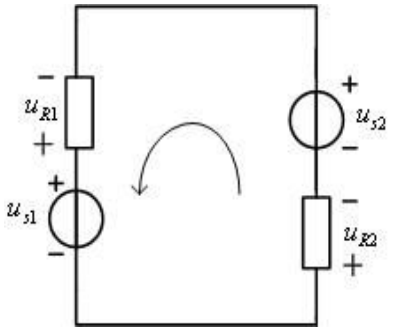
$$u_{R1}+u_{R2}-u_{s1}-u_{s2}=0$$

降压 — 升压 = 0

电场力做正功 电场力做负功

降压取“+”升压取“—”





$$-u_{s1}+u_{R1}+u_{s2}-u_{R2}=0 \qquad u_{s1}-u_{R1}-u_{s2}+u_{R2}=0$$

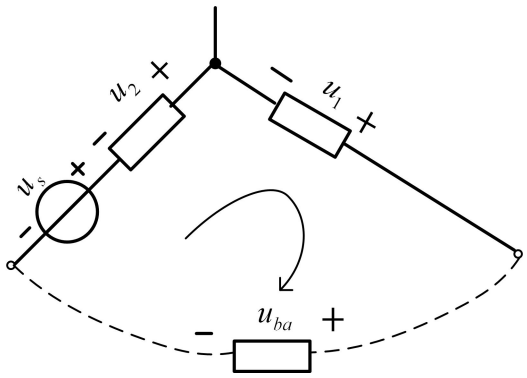
各支路电压的代数和等于零

$$u_{s1}+u_{R2}=u_{R1}+u_{s2}$$ 升压=降压 $$u_{R1}+u_{s2}=u_{s1}+u_{R2}$$

列写 KVL 方程前需要事先指定各支路电压参考方向和回路绕向

回路绕向会影响代数和中各支路电压项前面的正负

KVL 也适用于电路中任一假想电路



$$-U_S-U_2-U_1+U_{ba}=0$$

$$U_{ba}=U_1+U_2+U_S$$