(1)把各三角形联结的电源和负载都等效为星形联结;
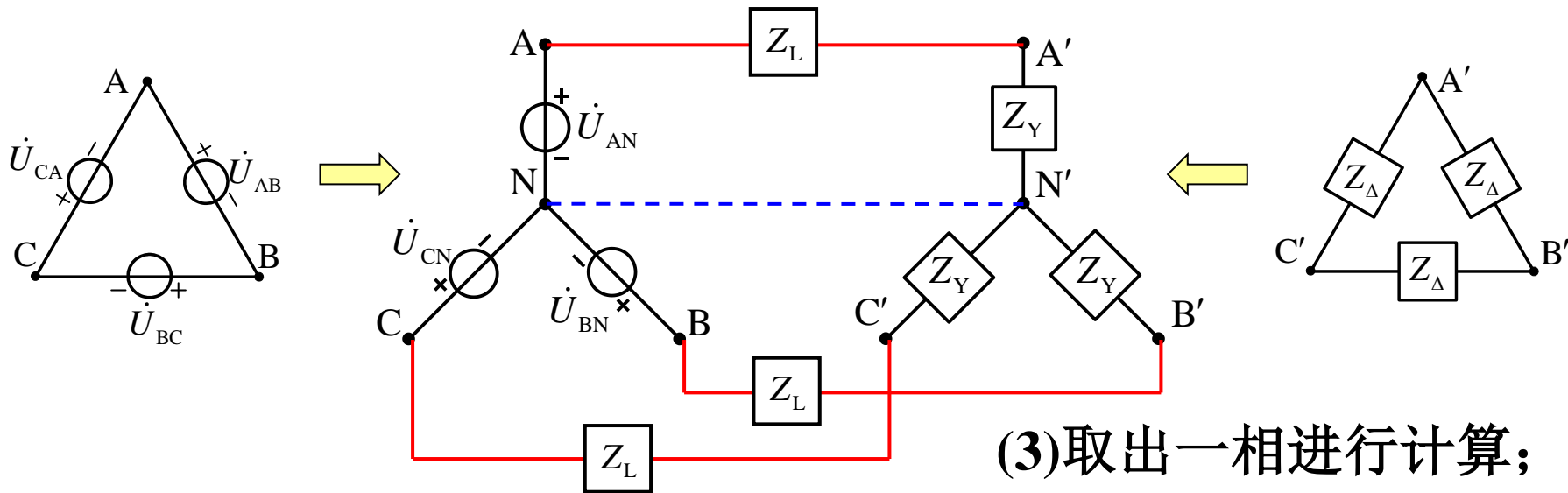
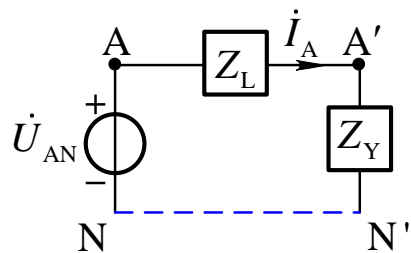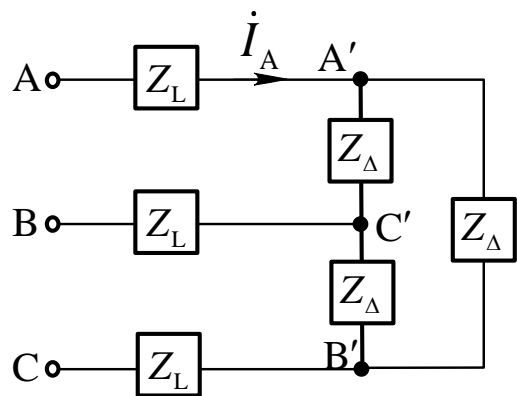**(3)取出一相进行计算;**

(2)画一条无阻抗的假想中线连中性点;
(4) 对称关系得其它相(线)电压、电流。
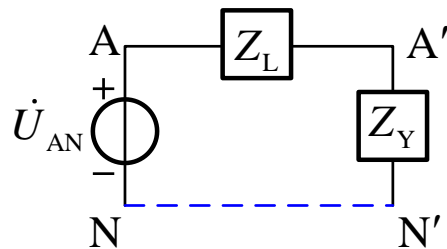
例2 图示已知对称电源线电压为380V，线阻抗 $Z_L = j2\,\Omega$ ，

负载 $Z_\Delta = (24 + j12)\,\Omega$ ，求负载的相电压和相电流及平均功率。

解： $\dot{U}_{AN} \approx 220\angle 0° \text{ V} \qquad Z_Y = Z_\Delta/3 = (8+j4)\,\Omega$

$$\dot{I}_A = \frac{\dot{U}_{AN}}{Z_L + Z_Y} \approx \frac{220\angle 0°}{8+j6} = 22\angle -36.9° \text{ A}$$

$$\dot{U}_{A'N'} = Z_Y \dot{I}_A \approx (8+j4)\times 22\angle -36.9° = 196.7\angle -10.3° \text{ V}$$

由相线关系求 △ 负载的相电压和相电流

$$\dot{U}_{A'B'} = \sqrt{3}\dot{U}_{A'N'}\angle 30° \approx 340.7\angle 19.7° \text{ V} \rightarrow U_P = 340.7\text{V}$$

$$\dot{I}_{A'B'} = \dot{I}_A/\sqrt{3}\angle -30° = 12.7\angle -6.9° \text{ A} \rightarrow I_P = 12.7 \text{ A}$$

$$P = 3U_P I_P \cos\varphi = 3\times 340.7\times 12.7\cos 26.6° \approx 11.6\text{kW}$$