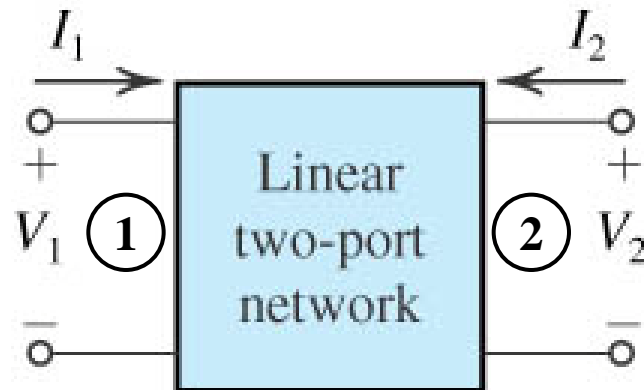


Caratterizzazione delle reti a due porte

Rete lineare a due porte

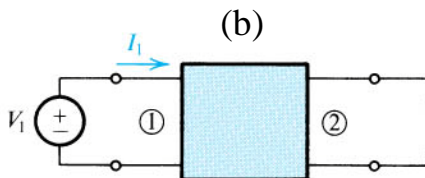


Parametri y (o ammettenze di corto circuito)

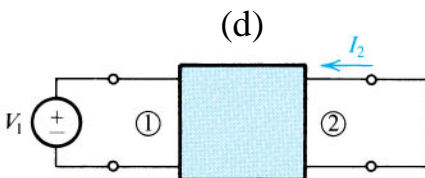
Per una qualsiasi rete lineare

$$\begin{cases} I_1 = y_{11}V_1 + y_{12}V_2 \\ I_2 = y_{21}V_1 + y_{22}V_2 \end{cases}$$

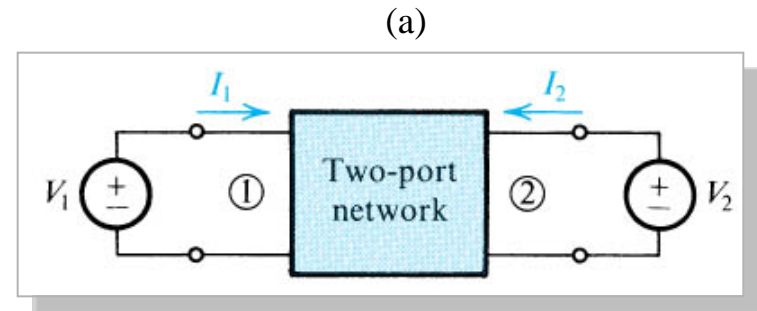
dove:

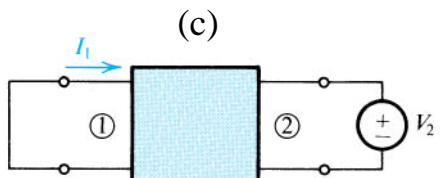
$$y_{11} \square \left. \frac{I_1}{V_1} \right|_{V_2=0}$$


rappresenta l'**ammettenza di ingresso**
con l'uscita in cc

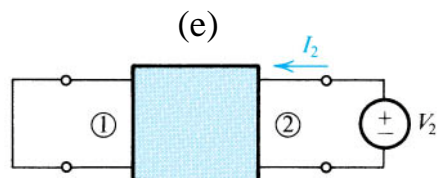
$$y_{21} \square \left. \frac{I_2}{V_1} \right|_{V_2=0}$$


rappresenta il **parametro di trasmissione**
con l'uscita in cc



$$y_{12} \square \left. \frac{I_1}{V_2} \right|_{V_1=0}$$


rappresenta il **parametro di retroazione**
con l'ingresso in cc

$$y_{22} \square \left. \frac{I_2}{V_2} \right|_{V_1=0}$$


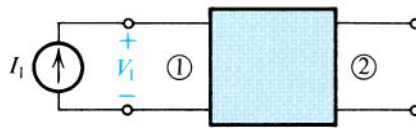
rappresenta l'**ammettenza di uscita**
con l'ingresso in cc

Parametri z (o impedenze a circuito aperto)

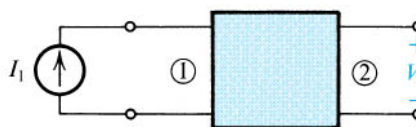
Per una qualsiasi rete lineare

$$\begin{cases} V_1 = z_{11}I_1 + z_{12}I_2 \\ V_2 = z_{21}I_1 + z_{22}I_2 \end{cases}$$

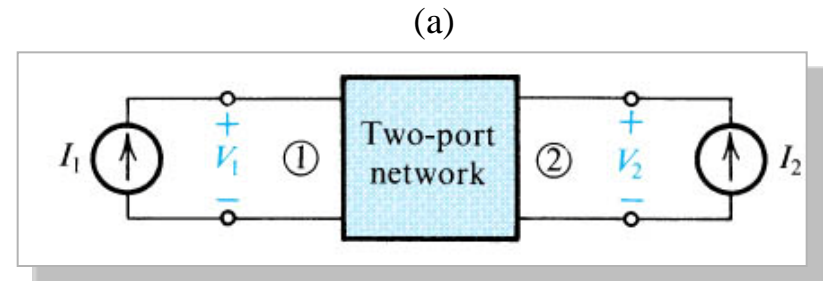
dove:

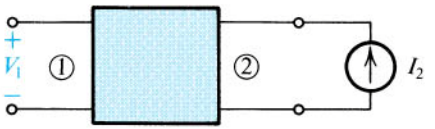
$$z_{11} \square \left. \frac{V_1}{I_1} \right|_{I_2=0}$$


rappresenta l'**impedenza di ingresso**
con l'uscita a ca

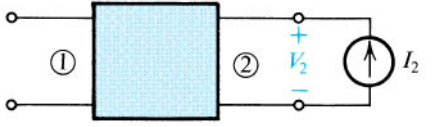
$$z_{21} \square \left. \frac{V_2}{I_1} \right|_{I_2=0}$$


rappresenta il **parametro di trasmissione**
con l'uscita a ca



$$z_{12} \square \left. \frac{V_1}{I_2} \right|_{I_1=0}$$


rappresenta il **parametro di retroazione**
con l'ingresso a ca

$$z_{22} \square \left. \frac{V_2}{I_2} \right|_{I_1=0}$$


rappresenta l'**impedenza di uscita**
con l'ingresso a ca

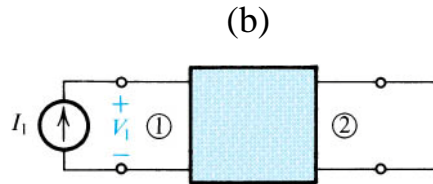
Parametri h (o parametri ibridi)

Per una qualsiasi rete lineare

$$\begin{cases} V_1 = h_{11}I_1 + h_{12}V_2 \\ I_2 = h_{21}I_1 + h_{22}V_2 \end{cases}$$

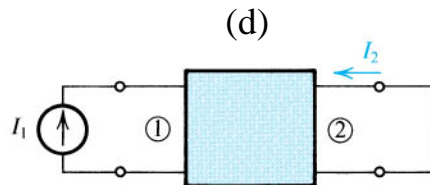
dove:

$$h_{11} \equiv \left. \frac{V_1}{I_1} \right|_{V_2=0}$$



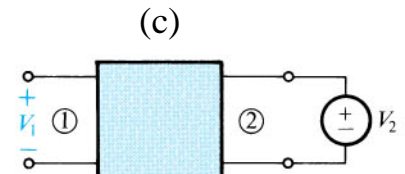
rappresenta l'**impedenza di ingresso**
con l'uscita in cc

$$h_{21} \equiv \left. \frac{I_2}{I_1} \right|_{V_2=0}$$



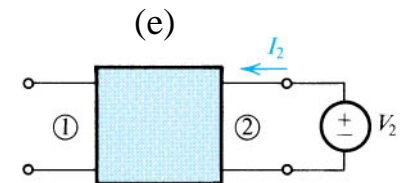
rappresenta il **guadagno di corrente**
con l'uscita in cc

$$h_{12} \equiv \left. \frac{V_1}{V_2} \right|_{I_1=0}$$

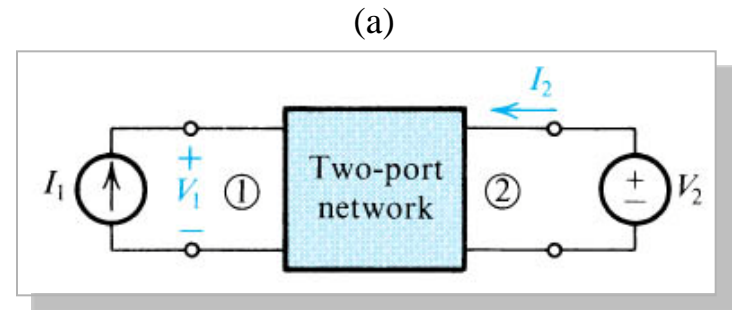


rappresenta il **rapporto di retroazione tra le tensioni**
con l'ingresso a ca

$$h_{22} \equiv \left. \frac{I_2}{V_2} \right|_{I_1=0}$$



rappresenta l'**ammettenza di uscita**
con l'ingresso a ca

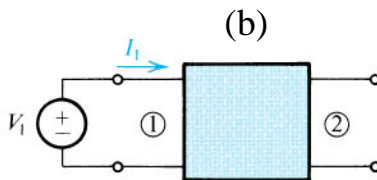


Parametri g (o parametri ibridi inversi)

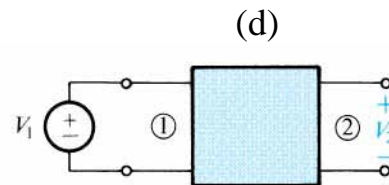
Per una qualsiasi rete lineare

$$\begin{cases} I_1 = g_{11}V_1 + g_{12}I_2 \\ V_2 = g_{21}V_1 + g_{22}I_2 \end{cases}$$

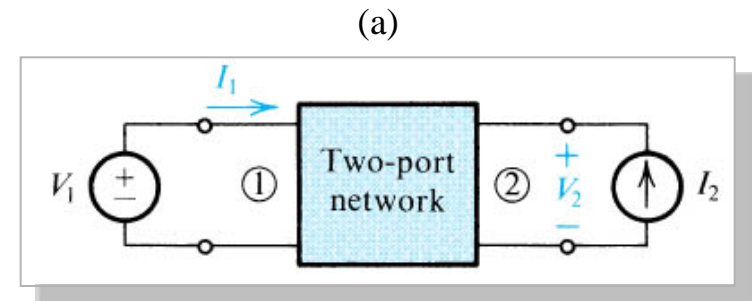
dove:

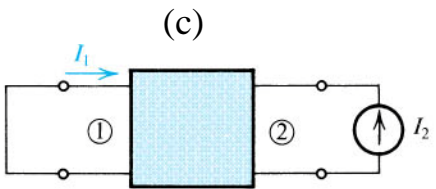
$$g_{11} \square \left. \frac{I_1}{V_1} \right|_{I_2=0}$$


rappresenta l'**ammettenza di ingresso**
con l'uscita a ca

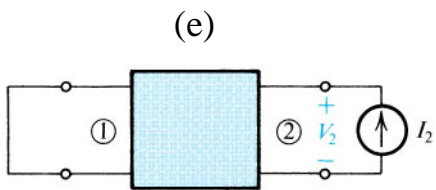
$$g_{21} \square \left. \frac{V_2}{V_1} \right|_{I_2=0}$$


rappresenta il **guadagno di tensione a vuoto**
con l'uscita a ca



$$g_{12} \square \left. \frac{I_1}{I_2} \right|_{V_1=0}$$


rappresenta il **rapporto di retroazione tra le correnti**
con l'ingresso in cc

$$g_{22} \square \left. \frac{V_2}{I_2} \right|_{V_1=0}$$


rappresenta l'**impedenza di uscita**
con l'ingresso in cc

Rappresentazione con circuiti equivalenti

