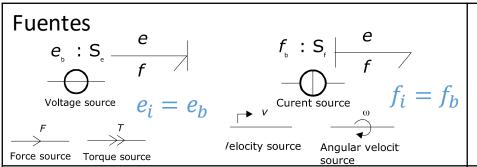
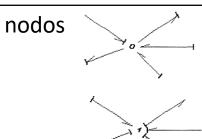
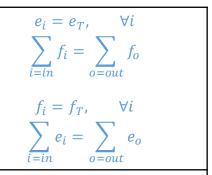
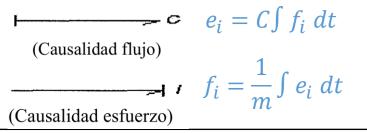
## Elementos del Bond Graph – Resumen



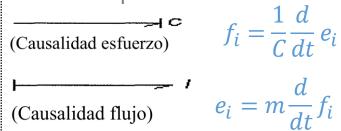


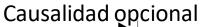


## Elementos de causalidad preferencial

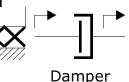


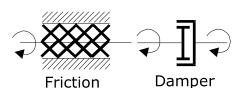








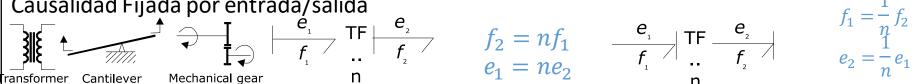




$$R: R \stackrel{e}{\setminus f} | e_i = Rf_i$$

$$R: R \mid \underbrace{e}_{f} \quad f_i = Re_i$$

## Causalidad Fijada por entrada/salida



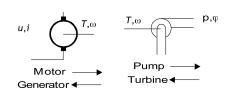
$$f_2 = nf_1$$

$$e_1 = ne_2$$

$$\begin{array}{c|c} e_{_{1}} \\ \hline f_{_{1}} \end{array} \mid \begin{array}{c} \mathsf{TF} & e_{_{2}} \\ \vdots & f_{_{2}} \end{array} \mid$$

$$f_1 = \frac{1}{n} f_2$$

$$e_2 = \frac{1}{n} e_1$$



$$\begin{array}{c|c} & e_{_{1}} & GY & e_{_{2}} \\ \hline f_{_{1}} & GY & f_{_{2}} \end{array}$$

$$e_2 = rf_1$$

$$e_1 = rf_2$$



$$f_2 = \frac{1}{r}e_1$$

$$f_1 = \frac{1}{r}e_2$$