# The High-Frequency Hybrid-π Model
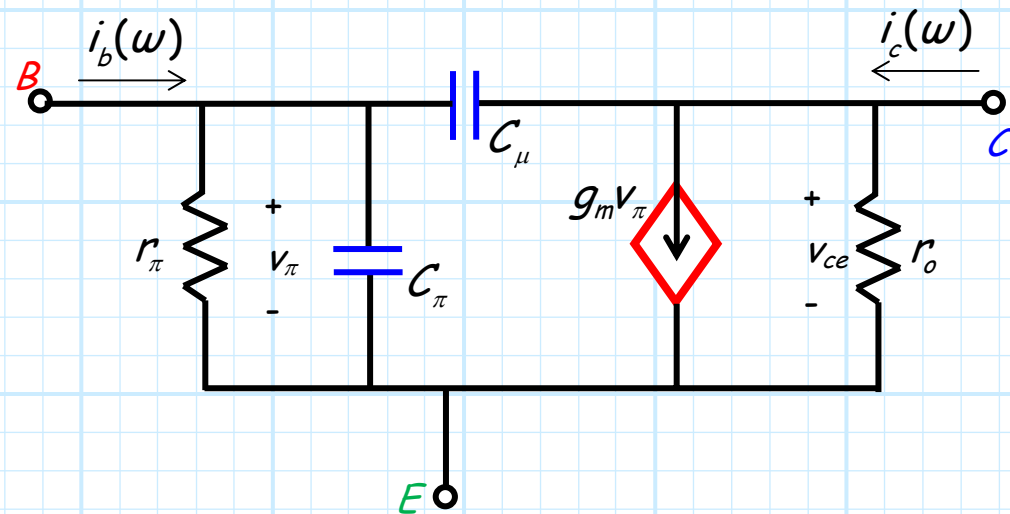
Combine the internal capacitances and lead resistance in a **modified** Hybrid-π model.



* Therefore use this model to construct small-signal circuit when $v_i$ is operating at **high** frequency.

* Note since $Z_C = 1/j\omega C$, all currents and voltages will be **dependent on operating frequency** $\omega$.

* Note the voltage across $r_\pi$ is $v_\pi$, but $v_\pi \neq v_{be}$ !!!

* Note at low-frequencies, the model reverts to the **original** Hybrid-π model.