The High-Frequency Hybrid-\( \pi \) Model

Combine the internal capacitances and lead resistance in a modified Hybrid-\( \pi \) model.

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

* Note since \( Z_C = \frac{1}{j\omega C} \), 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-\( \pi \) model.