Absorption Parallel configuration

\[ R_L' = \frac{R_L^2 - X_L^2}{R_L} \]
\[ X_L' = \frac{R_L R_L'}{X_L} \]

Convert to:

\[ Y_L'' = \frac{1}{X_L''} \]
\[ Y_p = \frac{1}{X_p} \]

Find \( X_L'' = \frac{1}{\frac{1}{X_L'} + \frac{1}{X_p}} \)

Replace \( X_p \) by impact of load

Replace \( Y_L'' \) by parallel to \( X_L'' \)

\[ \omega^2 = \frac{X_R X_L''}{X_L'} \]
\[ X_L = \frac{\omega^2}{X_L''} \]
Absorption - Series Configuration

Absorb as much of load \( X_L \) as possible into \( X_s \) (similar to \( Y_c \) T network)

\[
X_L = X_s + X_L''
\]
Find \( X_L'' = X_L - X_s \)

Replace \( X_s \) by \( X_s \) part of load:

\( X_L'' \) (You are using your load as part of the matching circuit)

Now resonate (serial) the \( X_L'' \)

\[ \text{Load} \quad i_0^2 = X_L X_L'' \]
Find \( X_L = \frac{\omega^2}{X_L''} \)