proof

$A \Theta B = \{w | B_w \subseteq A\}$

$\overline{A \Theta B} = \overline{\{w | B_w \subseteq A\}}$

If $B_w \subseteq A$, then $B_w \cap \overline{A} = \emptyset$

$$\begin{aligned}\overline{A \Theta B} &= \overline{\{w | B_w \subset A\}} = \overline{\{w | B_w \cap \overline{A} = \emptyset\}} \\ &= \{w | B_w \cap \overline{A} \neq \emptyset\} = \overline{A} \oplus \hat{B} \\ &(A \oplus B = \{w | (\hat{B})_w \cap A \neq \emptyset\})\end{aligned}$$