

# Filterish Quaternary Semantics of Attack Trees

Choice:

$$A \sqcup_F B = \max(A, B)$$

Sequence:

$$0 \triangleright_F B = 0$$

$$A \triangleright_F 0 = 0$$

$$A \triangleright_F B = 1, \text{ when } A \in \{\frac{1}{2}, 1\}$$

$$\frac{1}{4} \triangleright_F B = \frac{1}{4}$$

Parallel:

$$0 \odot_F B = 0$$

$$A \odot_F 0 = 0$$

$$A \odot_F B = \frac{1}{2}$$

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Same basic properties for each form of composition.