

Filterish Quaternary Semantics of Attack Trees

Filter properties that **hold** [Horne et al.:2016]:

$$((A \triangleright_F C) \odot_F (B \triangleright_F D)) \leq_4 ((A \odot_F B) \triangleright_F (C \odot_F D))$$

$$(A \odot_F (B \triangleright_F C)) \leq_4 ((A \odot_F B) \triangleright_F C)$$

Filter properties that **fail** [Horne et al.:2016]:

$$(A \triangleright_F (B \odot_F C)) \leq_r (B \odot_F (A \triangleright_F C))$$

$$(A \triangleright_F B) \leq_4 (A \odot_F B)$$

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Question:

Can we define a quaternary semantics
that is complete for all of the filter
properties?