# The Name of the Title is Hope

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We have a lot of theoretically rigorous over-approximation logics, which is to be expected given the rich treatment they have been enjoying for the last 5 decades. Under-approximation is the other side of the coin where the potential lies for development. An area which is nascent would be the application of Under-approximation logics to security models. This takes us from the realm of showing a protocol is secure to finding an attack within the protocol which is guarnteed to exist. This is a value add, and something the security industry has already adopted though without much formal methods through exploitability analysis. In this work, we aim to show with a theortical guarntee that the current core logics which support them are what they promise to be. They are sound, and they do have the capabilities to detect iterative, multistage attacks where adversaries interact with the loop. This effectively bridges the gap from current knowledge about exploitability and increases further confidence in the dissemination of the technique.



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