Typing and compositionality for security protocols: A generalization to the geometric fragment

We integrate, and improve upon, prior relative soundness results of two kinds. The first kind are typing results showing that any security protocol that fulfills a number of sufficient conditions has an attack if it has a well-typed attack. The second kind considers the parallel composition of protocols, showing that when running two protocols in parallel allows for an attack, then at least one of the protocols has an attack in isolation. The most important generalization over previous work is the support for all security properties of the geometric fragment.