Contribution ID: **12** Type: **not specified**

Calabi-Yau Periods in Black Hole Scattering at the Fifth Post-Minkowskian Order

In recent years, it has been observed that period integrals of Calabi-Yau manifolds, which originate from the compactification of string theory, appear in the classical scattering of black holes. These mathematical structures were observed for the first time at the fifth post-Minkowskian (5PM) order. In my talk, I will provide a brief introduction to these objects, particularly from a practitioner's perspective, and explain how they arise in the two-body problem of general relativity. Additionally, I will discuss our recent computations in the conservative sector at 5PM. Specifically, I will demonstrate that by analyzing canonical differential equations, we can understand the analyticity structure of the scattering angle, which in turn will constrain the boundary constants in our problem.

Authors: SAUER, Benjamin; NEGA, Christoph (employee@tum.de;member@tum.de;faculty@tum.de;alum@tum.de); MOGULL, Gustav; JAKOBSEN, Gustav Uhre; Prof. PLEFKA, Jan; USOVITSCH, Johann; DRIESSE, Matthias

Presenter: NEGA, Christoph (employee@tum.de;member@tum.de;faculty@tum.de;alum@tum.de)