

Violation of the Kluberg-Stern-Zuber theorem and operator mixing in SCET

Wednesday, September 11, 2019 9:30 AM (25 minutes)

A well-known result states that operators that vanish by the classical equation of motion do not mix into physical operators. The result guarantees that the S-matrix is invariant under large classes of field redefinitions. It is shown that (and why) the theorem is violated in soft-collinear effective theory beyond the leading power in the soft-collinear expansion. The mixing of eom operators into physical operators is computed at next-to-leading power (NLP), which completes the one-loop renormalization of NLP N-jet operators. It is explained how to deal with divergent collinear convolution integrals.

Primary authors: BENEKE, Martin (Technische Universitaet Muenchen (DE)); GARNY, Mathias (CERN); SZAFRON, Robert (TU München); WANG, Jian

Presenter: BENEKE, Martin (Technische Universitaet Muenchen (DE))

Session Classification: Wednesday Morning B