



Contribution ID: 196

Type: **Parallel Talk**

New implementation of the sector decomposition on FORM

Wednesday, 5 November 2008 14:25 (25 minutes)

Nowadays the sector decomposition technique, which can isolate divergences from parametric representations of integrals, becomes quite useful tool for numerical evaluations of the Feynman loop integrals. It is used to verify the analytical results of multi-loop integrals in the Euclidean region, or in some cases practically used in the physical region by combining with other methods handling the threshold. In an intermediate stage of the sector decomposition for the multi-loop integrals, one often have to handle enormously large expressions containing tons of terms. The symbolic manipulation system FORM is originally designed to treat such a huge expressions and has strong advantage for it. In this talk, the implementation of the sector decomposition algorithm on FORM is discussed. A number of concrete examples including cases of multi-loop diagrams are also shown.

Primary author: Dr UEDA, Takahiro (KEK)

Co-author: Dr FUJIMOTO, Junpei (KEK)

Presenter: Dr UEDA, Takahiro (KEK)

Session Classification: Methodology of Computations in Theoretical Physics - Session 1

Track Classification: 3. Computation in Theoretical Physics