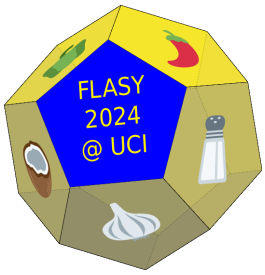

Contribution ID: **19** Type: **not specified**

Cutting operators with MATCHETE: automatic reduction to a minimal EFT basis and treatment of evanescent operators

Monday 24 June 2024 10:00 (45 minutes)

MATCHETE is a Mathematica program designed to automate the one-loop matching of a generic weakly-coupled UV theory to its corresponding Effective Field Theory (EFT) where heavy modes have been integrated out. By relying on functional methods, the matching process is very systematic and well-suited for computer execution. On the other hand, reduction of the obtained result to a minimal EFT basis, using integration by parts, reduction of Dirac and group structures, fierz identities and field redefinitions, present several challenges for the automation. In particular, evanescent operators appearing at one-loop from tree-level matching need to be addressed.
After describing the working principles of Matchete, I will present its current and future functionalities and demonstrate its application using a toy model.

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