Portorož 2017: New physics at the junction of flavor and collider phenomenology

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DsixTools, the SM Effective Field Theory code

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I will present DsixTools, a Mathematica package for the handling of the dimension six Standard Model Effective Field Theory. Among other features, DsixTools allows the user to perform the full 1-loop Renormalization Group Equations (RGEs) evolution of the Wilson coefficients in the Warsaw basis. This is achieved thanks to the SMEFTrunner module, which implements the full 1-loop RGEs previously derived in the literature. In addition, DsixTools also contains modules devoted to the matching to some low-energy effective operators (of common use in phenomenological studies) and their QCD and QED RGE running below the electroweak scale. After introducing the code, I will show some practical applications to illustrate its power and usability.

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