

## The Flavour Problem in theories beyond the Standard Model

The flavour sector of the Standard Model is problematic: from one side there is no explanation of the heterogeneity of fermion masses and mixings; from the other, any theory beyond the Standard Model that enriches the flavour sector typically predicts dangerous flavour violating processes, unless the new physics scale is very heavy. One of the open problems of particle physics nowadays is to find a solution to these problematic aspects and a large part of the community is actively working in this direction. In this TFM, the student will familiarise with flavour aspects in the Standard Model and beyond, including model building and analysis of flavour changing processes. The project will potentially lead to original investigation in both the quark and the lepton sectors.