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Modular Symmetry: a new perspective on the Flavor Puzzle

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Understanding the flavour structure of leptons, i.e. their mass pattern and mixing, is a major *unresolved* puzzle in theoretical particle physics. In the recent past, a substantial effort went into models based on discrete flavour symmetries, but that approach proved to be particularly challenging. In 2017 a new promising direction was suggested: a "bottom-up"approach based on modular invariance, a more predictive framework which may be able to provide testable predictions for incoming neutrino experiments. It is important to highlight both the strengths and the potential shortcomings of this new perspective. As an example, a recent model based on the modular group $\Gamma_2 \cong S_3$ will be presented (*JHEP09(2023)043*).

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