## Phenomenology 2022 Symposium: From Virtual to Real



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## Semisimple extensions of the Standard Model

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You are probably aware that the Standard Model can fit into su(5), so(10) and Pati-Salam. But did you know it can also fit into: su(4)+sp(4)+su(5)+su(2)+su(2). Probably not. Should you care? Also probably not. But what if I said, that without adding additional fermions (except 3 RHN), then there are only 340 semi-simple algebras the SM can actually fit into. This talk will tell the story behind the finding of these algebras. The talk is based on the papers: arXiv:2104.14555 and arXiv:2201.07245.

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