Topics in BSM physics

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<u>Standard model of particle physics:</u>

- **Quantum** (field) **theory** describing the dynamics and interactions of a set of **fundamental particles**
- Based on **gauge symmetries**
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In $2 \to n$, **break down at tree level**, ex: $\sigma_{2 \to n} \sim n!$

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Toy model: **Wess-Zumino model**
$$L = -|\partial\phi|^2 - \left|\phi + \phi^2\right|^2$$

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Currently investigating soft terms, and other superpotentials

Thank you!