

## Phenomenology 2023 Symposium



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# Mass-varying gauge boson that couples to the dark energy field

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We study the dark gauge boson in the gauged quintessence model. The gauged quintessence is the dark energy field under a gauge symmetry, and therefore its mass varies as the quintessence scalar value changes. The change of the dark gauge boson mass brings interesting consequences. The evolution of the universe is sensitively affected by the mass-varying dark gauge boson. We study various phenomenology of the dark gauge boson, including its production, evolution, and other implications.

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