

Phenomenology 2021 Symposium



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Black Hole Production of Monopoles the Early Universe

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In the early universe, black holes can easily produce monopoles. Via Hawking radiation, evaporating black holes heat up the surrounding plasma and create a temperature profile around the black hole that features symmetry restoration near the center. Eventually, this region cools off and undergoes the Kibble mechanism, producing monopoles. We demonstrate that this process can very efficiently produce monopoles. In the case where black holes reheat the universe, reheat temperatures above 100 GeV can already lead to monopoles overclosing the universe.

Summary

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