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Looking for Stringy Bosenova

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Black hole superradiance is an exciting tool to probe ultralight fields. In the case of gauge bosons, the buildup of electromagnetic fields in the superradiance cloud can lead to a phase transition, producing dark photon strings. After absorbing energy from the background gauge fields, these strings are ejected from the black hole, forming an expanding cloud. In this talk, we will explore the gravitational wave signatures of such an expanding cloud of strings, as well as the prospects for detecting remnants of the cloud if the dark photon mediates B-L charge.

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