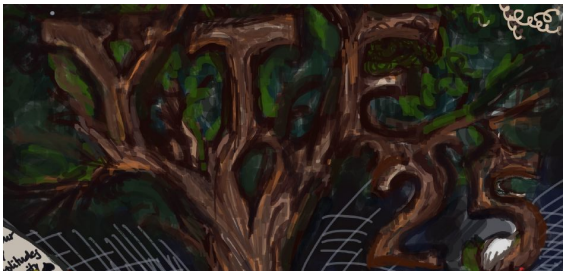

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Black hole hair transplant with ultra light dark matter

You can create a black hole bomb using a Kerr black hole by putting mirrors around it. This can happen because of a phenomenon called superradiance using which an incident wave can get reflected back with larger energy. The mirror then reflects it back and you can keep on extracting energy until the limit is reached. For a massive field, the mass itself acts as a natural barrier. Ultra light dark matter fields, if they exist, can in principle satisfy the superradiance condition, and form a cloud around a Kerr black hole. We will talk about how the signatures of such a cloud can be detected or used to constrain masses of these particles.

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