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## Forbidden Dark Matter Combusted Around Supermassive Black Hole

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The forbidden dark matter cannot annihilate into heavier partner or SM particles by definition at the late stage of the cosmological evolution. We point out the possibility of reactivating the annihilation channel of forbidden dark matter around supermassive black holes. The subsequent decay of the annihilation products to photon leaves unique signal around the black hole, which can serve as smoking gun of the forbidden dark matter. An UV complete right-handed neutrino dark matter model will also be presented as an example of such mechanism.

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