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Closing in on primordial black holes

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Observational constraints have closed off all but one mass-window for primordial black holes making up all of the dark matter, and there are some specific conditions required for their production in the first place. However, they remain a tantalising dark matter candidate because they require no new beyond the standard model particles and they would additionally provide a lot of information about the very early universe, particularly about inflation, if found. I will highlight some key recent results in the literature, with a focus on gravitational wave constraints, that describe how the viable parameter space for primordial black holes making up all of the dark matter is closing up, but also why it's worth checking every last window for signatures of their existence.

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