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To Collapse or not to Collapse: The Life of a Primordial Black Hole ROBERT CRAIG, JOLYON BLOOMFIELD, STEPHEN FACE, Massachusetts Inst of Tech-MIT — Primordial black holes offer insights into topics ranging from cosmological questions about inflationary models to astrophysical questions regarding supermassive black holes. Such insights depend on being able to predict the number density of black holes that form from primordial fluctuations. Traditionally this has been done by means of a "rule-of-thumb" developed by Carr in the 1980s, but recent numerical studies have shown that this predictor is a coarse tool at best. We present a two-parameter predictor with much more discrimination power that can be straightforwardly used to compute number densities. We also discuss challenges that face this type of prediction strategy, both analytically and numerically, and possible ways to circumvent them.

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