

It has recently been argued that the no-boundary proposal — a suggestion for the “wave function of the universe” due to Hartle & Hawking — is mathematically ill-defined, in the sense that a consistent implementation of it in terms of a path integral is impossible (Feldbrugge et al., PRD 95 103508 (1703.02076), PRL 119 171301 (1705.00192), PRD 97 023509 (1708.05104) & 1805.01609). This is purportedly due to singular, off-shell contributions to the path integral which would render large perturbations in de Sitter space unsuppressed. The discovery of these contributions would be made possible by a mathematical device, “Picard-Lefschetz theory”. I will point out the flaws in the logic leading to these conclusions, and argue that the no-boundary proposal does have a consistent formulation leading to physically reasonable predictions in cosmology, that singular configurations are irrelevant and that Picard-Lefschetz theory is a red herring.

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