

Alternative Derivation of the Propagator in Polar Coordinates by Feynman's Physical Interpretation of the Characteristic Function

QIAN Shang-Wu,¹ CHAN King-Man,¹ and GU Zhi -Yu²

¹ Physics Department, Peking University, Beijing 100871, China

² Physics Department, Capital Normal University, Beijing 100037, China

(Received: 2002-5-29; Revised:)

Abstract: This article revisits Feynman's characteristic function, and points out the insight and usefulness of his physical interpretation. As an example, the tedious and rather long derivation of the propagator in polar coordinates can be easily and clearly obtained by merely using Feynman's physical interpretation of the characteristic function and some well-known results of central force problem.

PACS: 03.65.Bz, 03.65.Dd

Key words: Feynman's characteristic function, propagator in polar coordinates

[\[Full text: PDF\]](#)

Close