Accepted Manuscript

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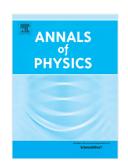
PII: S0003-4916(16)30213-5

DOI: http://dx.doi.org/10.1016/j.aop.2016.10.011

Reference: YAPHY 67229

To appear in: Annals of Physics

Received date: 26 May 2016 Accepted date: 8 October 2016



Please cite this article as: L. Jahangiri, H. Panahi, Quantum mechanical treatment of a constrained particle on two dimensional sphere, *Annals of Physics* (2016), http://dx.doi.org/10.1016/j.aop.2016.10.011

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ACCEPTED MANUSCRIPT

Quantum mechanical treatment of a constrained particle on two dimensional sphere

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September 7, 2016

Abstract

In this work, we study the motion of a particle on two dimensional sphere. By writing the Schrodinger equation, we obtain the wave function and energy spectra for three dimensional harmonic oscillator potential plus trigonometric Rosen-Morse non-central potential. By letting three special cases for intertwining operator, we investigate the energy spectra and wave functions for Smorodinsky-Winternitz potential model.

Keywords: Quantum mechanics, Motion on a sphere, Three dimensional harmonic oscillator potential, Trigonometric Rosen-Morse non-central potential, Intertwining method, Smorodinsky-Winternitz potential.

PACS numbers: 03.65.-w, 11.10. Ef, 04.20. Jb.

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