Commun. Theor. Phys. **66** (2016) 269–274 Vol. 66, No. 3, September 1, 2016

**Entropy, Fisher Information and Variance with Frost-Musulin Potenial**

J.O.A. Idiodi and C.A. Onate*∗*
Physics Department, University of Benin, Benin, Nigeria

 (Received February 22, 2016; revised manuscript received April 19, 2016)

***Abstract***

*This study presents the Shannon and Renyi information entropy for both position and momentum space* *and the Fisher information for the position-dependent mass Schr*¨o*dinger equation with the Frost-Musulin potential. The* *analysis of the quantum mechanical probability has been obtained via the Fisher information. The variance information* *of this potential is equally computed. This controls both the chemical properties and physical properties of some of the*
*molecular systems. We have observed the behaviour of the Shannon entropy. Renyi entropy, Fisher information and* *variance with the quantum number n respectively.*

**PACS numbers:** 03.65.Ca, 03.65.Ta, 89.70.+c, 31.15.Ew, 02.50.Cw
**Key words:** Fisher information, Shannon entropy, position-dependent mass

*Available at:* [*www.iopscience.iop.org*](http://www.iopscience.iop.org)*.*