Deriving Internal Energy by Virtue of Generalized Feynman-Hellmann Theorem for Mixed States

FAN Hong-Yi[1,2] and JIANG Zhong-Hua[3]

[1] Department of Physics, Shanghai Jiao Tong University, Shanghai 200030, China
[2] Department of Materials Science and Engineering, University of Science and Technology of China, Hefei 230026, China
[3] Special Class for Gifted Young, University of Science and Technology of China, Hefei 230026, China

Abstract: We show how to directly use the generalized Feynman-Hellmann theorem, which is suitable for mixed state ensemble average, to derive the internal energy of Hamiltonian systems. A concrete example, which is a two coupled harminic oscillators, is used for elucidating our approach.

[Full text: PDF]

Close