BOOK OF ABSTRACTS (60) ON CV

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Abstract

The collective nuclear structure N=28-50 and Z=28-50 atomic nuclei is studied by using the energ... of the ground state band. We discuss the nuclear structure using the observables of collectivity ... the energies of first excited 2+ states (E2g+), energy ratio R4/2 (=E4g+/E2g+) and the grou... inertia (θ= 1/E2g+) quadrant wise, which shows remarkable correlations. The experimental da... taken from (http://www.nndc.bnl.gov/ensdf, 2016). The whole data is divided into four quadrants ... Gupta et. al., (J.B. Gupta, J.H. Hamilton, A.V. Ramayya, Int. J. Mod. Phys. A, 5, 1155, 1990... N=28-38 and Z=28-38, which has neutron particles and proton particles called pp space; quad... and Z=40-50, which has neutron particles and proton holes called ph space; quadrant III for N=40-... which has neutron holes and proton holes called hh space; and quadrant IV for N=40-50 and ... neutron holes and proton particles called hp space. We find that the quadrant wise presentation of ... deformation observables, i.e. E2g+, R4/2 and the ground state band moment of inertia (θ) is very informa... the nuclear structure.

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HARMONIC OSCILLATOR MODEL FOR COMPUTATIONAL ANALYSIS OF TISSU... ELASTICITY USING MODIFIED BLOCH NMR FLOW EQUATION

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ABSTRACT

Visualization of MRI system as harmonic oscillator provides a great insight into relationship be... oscillating nuclei and tissues elasticity under the influence of effective magnetic field. This study ... Modified Bloch NMR flow equation by placing appropriate restriction on the system to characterize ... displacement function for the investigation of wavelength, velocity and tissue elasticity relation. The displ... of harmonic oscillator wave function in tissue was found to be strongly dependent on wavelength and velo... propagated wave, as it indicates the elastic nature of the tissue under investigation. Therefore, spatial displ... wave as it passes through different regions in a material can be utilized to map tissue elasticity. The total ... oscillator signal was expressed to be the product of transverse wave function (Hermite Polynomial) and ... exponential function to explore the unique property of Hermite polynomial to represent signal both in ... Fourier domain for fast and robust image processing in spatial and image domain. Further studies are requ... the theories and mathematical formulations using actual moving phantoms in MR scanners and optimiza... NMR parameters should be carried out using designed and constructed mechanical actuator.

Keywords: Bloch NMR flow equation, Harmonic oscillator, Magnetic resonance imaging, Tissue e...