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Study of Multiphonon $\gamma\gamma$-Band Through Modified Soft Rotor Formula PARVEEN KUMARI, HARISH MOHAN MITTAL, Dr. B.R.Ambedkar National Institute of Teschnology Jalandhar — The structure of multiphonon $\gamma\gamma$-band of ^{156}Gd is investigated by using the Modified Soft Rotor Formula (MSRF). The Modified Soft Rotor Formula proposed by Gupta et al. [1] is given as:

$$E(I) = EK + \frac{\hbar^2 I(I+1)}{2\theta(1+\sigma I)}, \tag{1}$$

where θ is moment of inertia, σ is known as softness parameter and EK is constant energy term. The calculated values of moment of inertia of $\gamma\gamma$-band are almost equal to the moment of inertia of γ-band. The study of K=2 γ-band and K=4 $\gamma\gamma$-band using MSRF yield good energy values. The small values of the softness parameter and positive values of moment of inertia are obtained for multiphonon band. The staggering pattern in γ-band and $\gamma\gamma$-band are also studied. Recently, the study of multiphoon $\gamma\gamma$-band in ^{112}Ru and isotopes of Mo have been done by Kumari and Mittal [2].

[1] J. B. Gupta, S. Sharma and V. Katoch, Pramana J. of Phys., 81, 75 (2013).
[2] Parveen Kumari and H.M. Mittal, Physica Scripta (2015) In Press.

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