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1. The orbital angular momentum of the Co atom in Co_2MnSn

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The electronic structures of Co_2MnSn are calculated by the interpolation scheme which is applicable to the Heusler alloys as an extension of the method used by Mueller (1966). The parameters in the interpolation scheme are determined so as to reproduce the energy values caluculated by SAPW method. It has been expected that for the Co atom in the alloys Co_2MnSn, Co_2TiSn and Co_2TiAl, the orbital angular mementum contributes to the magnetic moment and the internal magnetic field. Therefore, the orbital angular momentum of the Co atom in Co_2MnSn has been calculated by the perturbation theory in terms of the spin–orbit interaction.

It will be discussed whether the orbital angular momentum is quenched or not.

2. Quantum Molecular Dynamics Study of a Two-level Model with an Alternative External Field

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Periodic and quasi-periodic response of a two-level model, whose Hamiltonian is expressed by a pseudo-spin operator, is studied numerically and analytically, where the methods (1) Fourier analysis (2) stroboscopic representation and (3) projection of an orbit are used. In generally, the model shows a quasi-periodic motion. However, the intensity of the external