

## Dynamic spin susceptibility in f-electron Systems in the ferromagnetic state

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**Abstract:** In order to make a theoretical study of dynamic spin susceptibility due to strong spin fluctuations of f-electrons, in low temperature ferromagnetic state, in lanthanide or actinide compounds, called as f-electron systems, and their anomalous physical properties, we use Zubarev's technique and the periodic Anderson model (PAM) with f-electron Coulomb correlation energy in a mean-field approximation in ferromagnetic limit. The f-electron occupancies for spin up and spin down and the magnetization are calculated numerically and self-consistently, from f-electron Green's function. The difference for up spin and down spin f-electron occupancy, gives rise to ferromagnetism in the system. We calculate temperature dependent susceptibility and by varying the different model parameters such as the position of f-level, Coulomb interaction energy and strength of hybridization between conduction and f-electrons of the system, we study the variation of temperature dependent susceptibility. It is found in the ferromagnetic limit of the coulomb interaction, the susceptibility is enhanced up to Curie temperature ( $T_c$ ) throughout the temperature and with increase of Coulomb correlation energy, the Curie temperature is enhanced.