ON THE TEMPERATURE AND CONCENTRATION DRIVEN CRITICAL ELECTRON REDISTRIBUTION IN MAGNETIC AND SUPERCONDUCTING ALLOYS

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9.7 cm

We consider a model describing magnetic and superconductors alloy $\mathrm{Re^{(1)}}_{1-\mathrm{x}}\mathrm{Re^{(2)}}_{\mathrm{x}}\mathrm{X}$. We build a phase diagram of the system displaying the dependence of the critical temperatures *versus* concentration x. We investigate the temperature dependence of the chemical potential and average occupation numbers for a given concentration x. We find that these quantities exhibit kinks at all critical temperatures of the system. Moreover, plotting these quantities against the concentration x for a given temperatures, we also observe kinks connected with all critical concentrations of the system. This novel effect we call temperature and concentration driven critical electron redistribution and we expect experimental confirmation of this new effect.

13.4 cm

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