Electronic structure and magnetic properties of HoNiSnD – *ab-initio* calculations.

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The electronic and magnetic properties of HoNiSn and $HoNiSnD_{0.68}$ alloys were calculated by *ab-initio* full-potential scalar (FPLO-CPA) and full relativistic (FPLO) local orbital method within the local density approximation (LDA). The exchange correlation potential was used in the form of Perdew and Wang. The self-consistent band calculations of HoNiSn were performed for orthorhombic TiNiSi-type structure and for hexagonal ZrNiAl-type structure. We studied also the influence of hydrogenation on the electronic structure of $HoNiSnD_{0.68}$. *Ab-initio* band calculations have shown that the hydrogenation change the electronic structure near the Fermi level.