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## **Pressure dependence of magnetism and martensitic properties in Co-doped NiMnGa alloys**

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NiMnGa alloys display several giant effects (e.g. magnetocaloric, magnetoelastic, magnetoresistive) due to a strong interplay between magnetic and structural degrees of freedom. They can be finely tuned by means of suitable changes in stoichiometry ( $\text{Ni}_{50+x}\text{Mn}_{25+y}\text{Ga}_{25+z}$ ,  $x+y+z=0$ ) and/or element substitutions. It has been recently shown that for Mn-rich NiMnGa alloys, Co substitution produces remarkable changes in magnetism and structure, giving rise to a strong and negative field dependence of the transformation temperature. We present the effects of hydrostatic pressure (up to 1 GPa) on magnetism and martensitic transition. Such a study allows to deepen the effects of cell contractions on the main properties and on the fundamental interactions. Remarkably in  $\text{Ni}_{45}\text{Co}_5\text{Mn}_{31}\text{Ga}_{19}$ , a huge and positive effect of pressure on transition temperature ( $dT_m/dP=28$  K/GPa) was found. The pressure effects will be discussed and correlated to the results of structural, linear thermal expansion and magnetic measurements.