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# Complex magnetic differentiation of cobalts in NaxCoO2 with 22 K Néel temperature

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## Abstract

Single crystals of sodium cobaltates NaxCoO2 with x ≈ 0.8 were grown by the floating zone technique. Using electrochemical Na de-intercalation method we reduced the sodium content in the as-grown crystals down to pure phase with 22 K Néel temperature and x ≈ 0.77. The 59Co NMR study in the paramagnetic state of the TN = 22 K phase permitted us to evidence that at least 6 Co sites are differentiated. They could be separated by their magnetic behavior into three types: a single site with cobalt close to non-magnetic Co3+, two sites with the most magnetic cobalts in the system, and the remaining three sites displaying an intermediate behavior. This unusual magnetic differentiation calls for more detailed NMR experiments on our well characterized samples. © 2014 Pleiades Publishing, Inc.

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