

## Sodium cobaltates: A golden mine for solid-state NMR

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The layered cobalt oxides  $A_x\text{CoO}_2$  ( $A=\text{Li,Na}\dots$ ) are extraordinary materials in more ways than one. They were first known in the 70s as intercalation compounds:  $\text{LiCoO}_2$  is actually used in the famous "Li-ion" batteries, which have largely contributed to the recent development of portable electronics. Interest in these materials had already been revived once in the 90s, following the demonstration of remarkable thermoelectric properties. But it was the discovery of superconductivity in 2002 (after intercalation of water molecules in  $\text{Na}_x\text{CoO}_2$ ), as well as apparent similarities with the crystallographic and electronic properties of the cuprate superconductors, which prompted a very wide popularity of these compounds. This presentation will primarily aim at giving an overview of the phase diagram of  $\text{Na}_x\text{CoO}_2$  as seen by NMR measurements, while insisting on the striking peculiarity of this compound: the coupling between electronic properties and the network of sodium ions.

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[1] See for example Electronic Texture of the Thermoelectric Oxide  $\text{Na}_{0.75}\text{CoO}_2$ , M.-H. Julien et al., *Phys. Rev. Lett.* **100**, 096405 (2008)