Supporting information

"Structural and magnetic characterization of a 1D chain of [Co(II)$_2$(μ-aqua)(μ-carboxylate)$_2$] strung cores"

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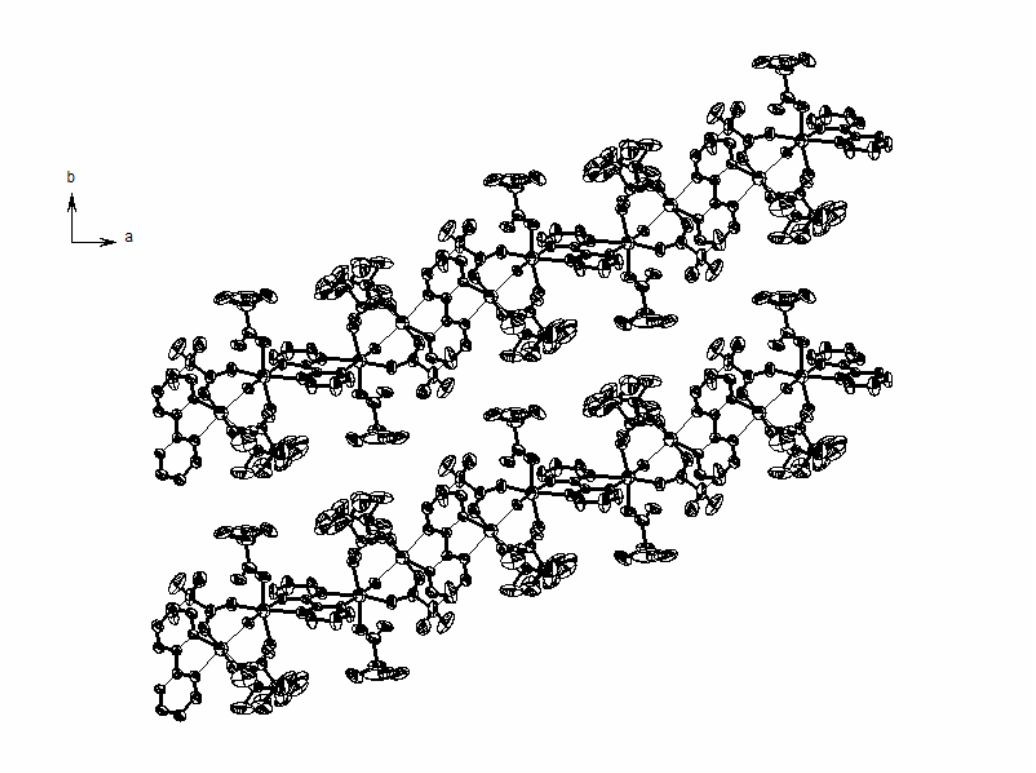

Figure S1. Chains packing view along *c* axis direction. Hydrogen atoms omitted for clarity.

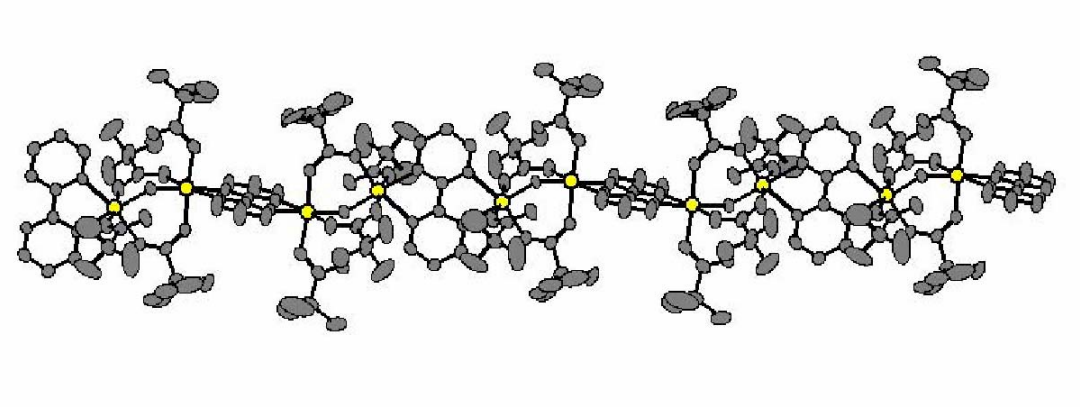

Figure S2. Perspective of the zigzag arrangement of Co(II) sites along the chain.

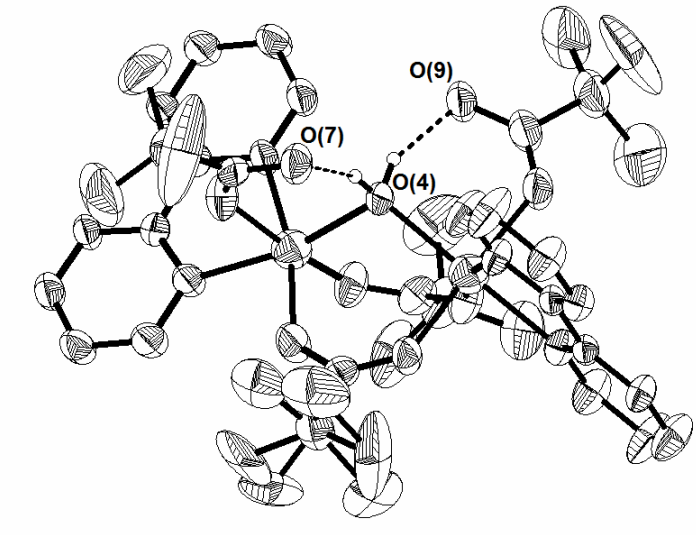

Figure S3. *ORTEP* (50% ellipsoid probability) representation of the dinuclear [$Co_2(\mu\text{-}OH_2)(\mu\text{-}O_2CC(CH_3)_3)_2$] unit of the chain showing the H-bond interaction of the non-bridging carboxylate with the bridging aqua ligand.

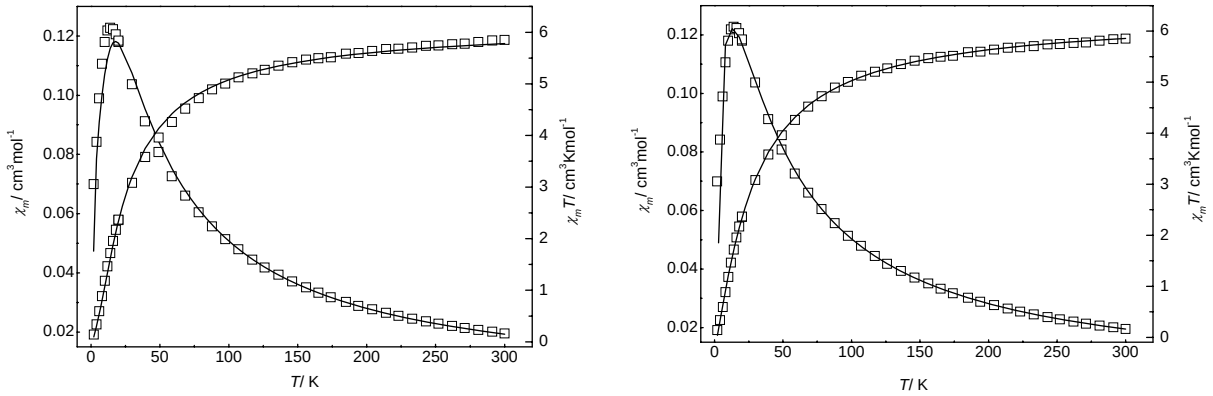

Figure S4. $\chi_m T$ vs T and χ_m vs T plots in the 2-300K range. Empty squares: experimental data. Full line: best fitting curves with model b); left panel and model d); right panel.

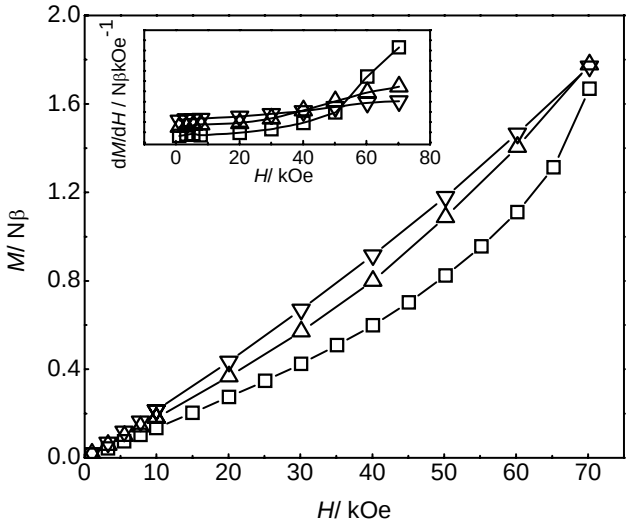

Figure S5. *M* vs *H* plot at three different temperatures: (∇) 10K, (Δ), 6K and (□) 1.8K. Inset: field derivative of the magnetization. Lines are only for eye guideline.

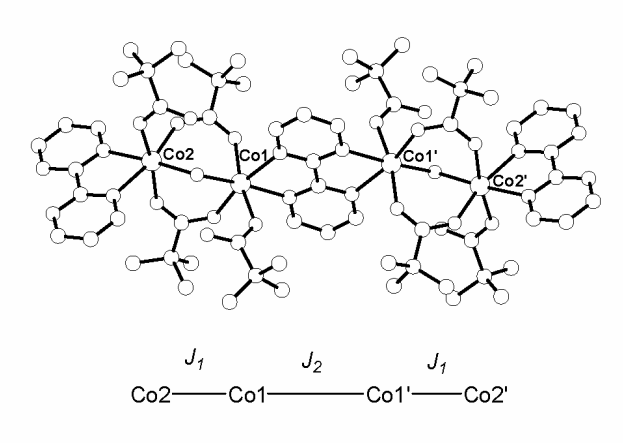

Figure S6. Co_4 tetranuclear model, extracted from the X-ray structure geometry, employed in the DFT calculations. The considered magnetic exchange interactions are additionally shown.

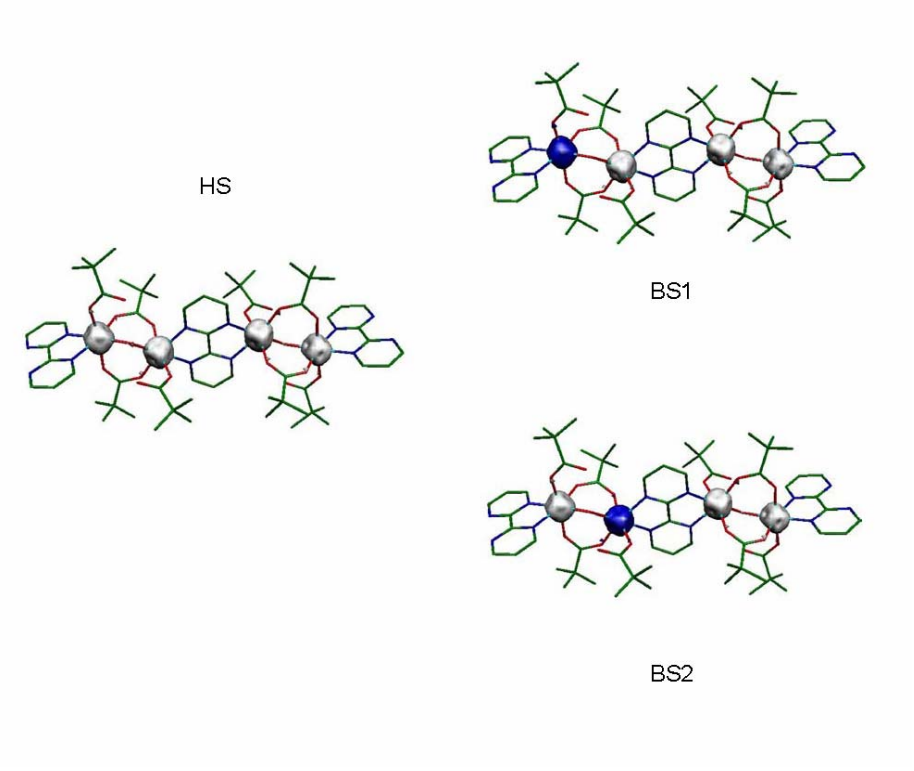

Figure S7. Spin density surfaces (0.03 a.u. isogrid values) of the three possible spin topologies calculated. White and blue colours represent positive and negative regions.