Catena(hexa-aqua-cobalt(II) tetra-aqua-\(\text{(?2-1,2,4,5-benzenecarboxylato-o, o')}\) -cobalt(II) hydrate): A new symmetry for an old polymorphic phase

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The title cobalt complex \((\text{C10H38Co2O26})\) consists of \([\text{Co(H2O)}4\text{(C10H2O8)}]2\)-n anionic chains, balanced by \([(\text{Co(H2O)}6)]2^{+}\) cations and eight solvato water molecules, some of which are disordered. The chains are formed by \text{Co(H2O)}4 "beads" threaded by fully deprotonated benzenecarboxylato anions binding in a stretched, trans fashion, and they are linked by H-bonds into a 2D structure. The cationic groups and solvato water molecules form a second kind of 2D arrays, "sandwiched" by the latter ones and linking the lot into a 3D structure through a very complex H-bonding interaction scheme. The structure presents a very conspicuous pseudo symmetry, and it appears to be a slight polymorphic modification of an already published isologue of identical formulation but with the higher symmetry properly attained, in a volume half as large. The slight differences between both structures seems to reside mainly in the (disordered) solvates, as suggested by the overlap of both models.