LUCK DARNIÈRE, MARKUS JUNKER, *Completions and model completions of co-
Heyting algebras.*
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We have introduced a notion of (co)dimension, stollen from algebraic geometry, for
every element of a distributive bounded lattice. It happens that these notion has a
better (functorial) behavior when restricted to the class of co-Heyting algebras. Using
it we have obtained the following results, for which preprints are available on Arxiv.

1) A characterisation of the pro-finite-dimensional completion of any co-Heyting al-
gebra as its Hausdorff completion for a certain pseudometric based on the codimension.
We prove that this completion has some familiar analytic properties such as the con-
vergence of every monotonic sequence on a compact subset.

2) New lights on the remarkable algebraic properties of finitely presented co-Heyting
algebras. By showing how the topology induced by the above mentioned pseudomet-
cratic captures these algebraic properties, we extend them to the much larger class of
precompact Hausdorff co-Heyting algebras.

3) For each fixed integer $d$, a model-completion result (with two meaningful axioms)
for an extension by definition of the variety of the so-called $d$-th slice.

4) For each of the 6 varieties of co-Heyting algebras which are locally finite and have
the amalgamation property, a simple axiomatization of their model-completion.