▸ LUCK DARNIÈRE, MARKUS JUNKER, *Completions and model completions of co-Heyting algebras.*
Faculté des sciences, 2 Bd Lavoisier, 49045 Angers Cedex 01.
E-mail: `Luck.Darniere at univ-angers.fr`.
Mathematisches Institut, Eckerstrasse 1, 79104 Freiburg, Deutschland.
E-mail: `markus.junker at math.uni-freiburg.de`.

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 algebra 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 convergence 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 pseudometric 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.