Workshop on Computational Universal Algebra
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Organizers
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Computing with finite ordered algebraic structures

by
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Applications of algebra in logic and computer science often have a natural underlying partial order structure, and the basic algebraic operations are usually either order-preserving or order-reversing in each argument. In this talk we consider the issues of how to implement finite structures of this type in the computer algebra system Sage, and how to connect to other computational systems such as the Universal Algebra Calculator and theorem provers/model finders like Prover9/Mace4. This makes it possible to compute fairly efficiently with small ordered algebraic structures, such as partially ordered semigroups, (semi)lattices with operators, idempotent semirings, residuated lattices and relation algebras. Participants who would like to get hands-on experience with these structures are encouraged to install Sage from sagemath.org on their computers before the workshop.

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