

HORIZON  
2020

# Syntax Meets Semantics: Methods, Interactions, and Connections in Substructural logics.

## Results

### Project Information

#### SYSMICS

Grant agreement ID: 689176

[Project website](#) ↗

#### Funded under

EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions

#### Total cost

€ 580 500,00

#### DOI

[10.3030/689176](https://doi.org/10.3030/689176) ↗

#### EU contribution

€ 504 000,00

Project closed

#### EC signature date

30 November 2015

#### Coordinated by

UNIVERSITA DEGLI STUDI DI SALERNO



#### Start date

1 March 2016

#### End date

28 February 2019

CORDIS provides links to public deliverables and publications of HORIZON projects.

Links to deliverables and publications from FP7 projects, as well as links to some specific result types such as dataset and software, are dynamically retrieved from OpenAIRE ↗.

## Deliverables

## Documents, reports (13)



[Third workshop report](#)↗

Report on the third workshop.

[Technical report 1](#)↗

Technical report on WP4

[Technical report 2](#)↗

Technical report on WP 5

[Progress Report](#)↗

[Technical report 5](#)↗

Technical report on WP8

[Technical report 6](#)↗

Technical report on WP9

[Fourth workshop report](#)↗

Report on the fourth workshop.

[Report on the first workshop.](#)↗

[Final conference report](#)↗

Final conference report.

[Technical report 3](#)↗

Technical report on WP6

[Conference proceedings](#)↗

Initial conference proceedings

[Second workshop report](#)↗

Report on the second workshop

[Technical report 4](#)↗

Technical report on WP7

## Publications

[On Kalman's functor for bounded hemi-implicative semilattices and hemi-implicative lattices](#) ↗

**Author(s):** Ramon Jansana, Hernán Javier San Martín

**Published in:** Logic Journal of the IGPL, Issue 26/1, 2017, Page(s) 47-82, ISSN 1367-0751

**Publisher:** Oxford University Press

**DOI:** 10.1093/jigpal/jzx052

A Real-Valued Modal Logic

**Author(s):** Diaconescu Denisa, Metcalfe George, Schnüriger Laura

**Published in:** Logical Methods in Computer Science, Issue 14(1), 2018, ISSN 1860-5974

**Publisher:** Technischen Universität Braunschweig

[Towards a probability theory for product logic: States, integral representation and reasoning](#) ↗

**Author(s):** Tommaso Flaminio, Lluís Godo, Sara Ugolini

**Published in:** International Journal of Approximate Reasoning, Issue 93, 2018, Page(s) 199-218, ISSN 0888-613X

**Publisher:** Elsevier BV

**DOI:** 10.1016/j.ijar.2017.11.003

[Cut Elimination, Identity Elimination, and Interpolation in Super-Belnap Logics](#) ↗

**Author(s):** Adam Přenosil

**Published in:** Studia Logica, Issue 105/6, 2017, Page(s) 1255-1289, ISSN 0039-3215

**Publisher:** Kluwer Academic Publishers

**DOI:** 10.1007/s11225-017-9746-8

[Back-and-forth systems for fuzzy first-order models](#) ↗

**Author(s):** Pilar Dellunde, Àngel García-Cerdaña, Carles Noguera

**Published in:** Fuzzy Sets and Systems, 2018, ISSN 0165-0114

**Publisher:** Elsevier BV

**DOI:** 10.1016/j.fss.2018.01.016

[A New Hierarchy of Infinitary Logics in Abstract Algebraic Logic](#) ↗

**Author(s):** Tomáš Lávička, Carles Noguera

**Published in:** Studia Logica, Issue 105/3, 2017, Page(s) 521-551, ISSN 0039-3215

**Publisher:** Kluwer Academic Publishers

**DOI:** 10.1007/s11225-016-9699-3

[Neighborhood semantics for modal many-valued logics](#) ↗

**Author(s):** Petr Cintula, Carles Noguera  
**Published in:** Fuzzy Sets and Systems, 2017, ISSN 0165-0114  
**Publisher:** Elsevier BV  
**DOI:** 10.1016/j.fss.2017.10.009

[Implicational \(semilinear\) logics III: completeness properties ↗](#)

**Author(s):** Petr Cintula, Carles Noguera  
**Published in:** Archive for Mathematical Logic, 2017, ISSN 0933-5846  
**Publisher:** Springer Verlag  
**DOI:** 10.1007/s00153-017-0577-0

[On the structure theory of Łukasiewicz near semirings ↗](#)

**Author(s):** Ivan Chajda, Davide Fazio, Antonio Ledda  
**Published in:** Logic Journal of the IGPL, Issue 26/1, 2017, Page(s) 14-28, ISSN 1367-0751  
**Publisher:** Oxford University Press  
**DOI:** 10.1093/jigpal/jzx044

[Stone-Type Representations and Dualities for Varieties of Bisemilattices ↗](#)

**Author(s):** Antonio Ledda  
**Published in:** Studia Logica, Issue 106/2, 2018, Page(s) 417-448, ISSN 0039-3215  
**Publisher:** Kluwer Academic Publishers  
**DOI:** 10.1007/s11225-017-9745-9

[On Some Properties of PBZ\\*-Lattices ↗](#)

**Author(s):** Roberto Giuntini, Antonio Ledda, Francesco Paoli  
**Published in:** International Journal of Theoretical Physics, Issue 56/12, 2017, Page(s) 3895-3911, ISSN 0020-7748  
**Publisher:** Kluwer Academic/Plenum Publishers  
**DOI:** 10.1007/s10773-017-3374-y

[On Principal Congruences in Distributive Lattices with a Commutative Monoidal Operation and an Implication ↗](#)

**Author(s):** Ramon Jansana, Hernán Javier San Martín  
**Published in:** Studia Logica, 2018, ISSN 0039-3215  
**Publisher:** Kluwer Academic Publishers  
**DOI:** 10.1007/s11225-018-9796-6

[MacNeille transferability and stable classes of Heyting algebras ↗](#)

**Author(s):** Guram Bezhanishvili, John Harding, Julia Ilin, Frederik Möllerström Lauridsen  
**Published in:** Algebra universalis, Issue 79/3, 2018, ISSN 0002-5240

**Publisher:** Birkhauser Verlag  
**DOI:** 10.1007/s00012-018-0534-8

[Hypersequents and Systems of Rules ↗](#)

**Author(s):** Agata Ciabattoni, Francesco A. Genco  
**Published in:** ACM Transactions on Computational Logic, Issue 19/2, 2018, Page(s) 1-27, ISSN 1529-3785  
**Publisher:** Association for Computing Machinery, Inc.  
**DOI:** 10.1145/3180075

[Varieties of De Morgan monoids: Minimality and irreducible algebras ↗](#)

**Author(s):** T. Moraschini, J.G. Raftery, J.J. Wannenburg  
**Published in:** Journal of Pure and Applied Algebra, 2018, ISSN 0022-4049  
**Publisher:** Elsevier BV  
**DOI:** 10.1016/j.jpaa.2018.09.015

[Expanding  \$\mathbf{FL}\$  with a Boolean connective ↗](#)

**Author(s):** Rodolfo C. Ertola-Biraben, Francesc Esteva, Lluís Godo  
**Published in:** Soft Computing, 2016, ISSN 1432-7643  
**Publisher:** Springer Verlag  
**DOI:** 10.1007/s00500-016-2275-y

[Is multiset consequence trivial? ↗](#)

**Author(s):** Petr Cintula, Francesco Paoli  
**Published in:** Synthese, 2016, ISSN 0039-7857  
**Publisher:** D. Reidel Pub. Co.  
**DOI:** 10.1007/s11229-016-1209-7

[Maximality in finite-valued Łukasiewicz logics defined by order filters ↗](#)

**Author(s):** Marcelo E Coniglio, Francesc Esteva, Joan Gispert, Lluis Godo  
**Published in:** Journal of Logic and Computation, Issue 29/1, 2018, Page(s) 125-156, ISSN 0955-792X  
**Publisher:** Oxford University Press  
**DOI:** 10.1093/logcom/exy032

[Corrigendum to “Towards a probability theory for product logic: States, integral representation and reasoning” \[Int. J. Approx. Reason. 93 \(2018\) 199–218\] ↗](#)

**Author(s):** Tommaso Flaminio, Lluis Godo, Sara Ugolini  
**Published in:** International Journal of Approximate Reasoning, Issue 103, 2018, Page(s) 267-269, ISSN 0888-613X  
**Publisher:** Elsevier BV  
**DOI:** 10.1016/j.ijar.2018.09.010

[VARIETIES OF DE MORGAN MONOIDS: COVERS OF ATOMS ↗](#)

**Author(s):** T. MORASCHINI, J. G. RAFTERY, J. J. WANNENBURG  
**Published in:** The Review of Symbolic Logic, 2019, Page(s) 1-37, ISSN 1755-0203  
**Publisher:** Cambridge University Press  
**DOI:** 10.1017/s1755020318000448

[Subframization and stabilization for superintuitionistic logics](#) ↗

**Author(s):** Guram Bezhanishvili, Nick Bezhanishvili, Julia Ilin  
**Published in:** Journal of Logic and Computation, Issue 29/1, 2019, Page(s) 1-35, ISSN 0955-792X  
**Publisher:** Oxford University Press  
**DOI:** 10.1093/logcom/exy035

[Epimorphisms, Definability and Cardinalities](#) ↗

**Author(s):** T. Moraschini, J. G. Raftery, J. J. Wannenburg  
**Published in:** Studia Logica, 2019, ISSN 0039-3215  
**Publisher:** Kluwer Academic Publishers  
**DOI:** 10.1007/s11225-019-09846-5

[STABLE MODAL LOGICS](#) ↗

**Author(s):** GURAM BEZHANISHVILI, NICK BEZHANISHVILI, JULIA ILIN  
**Published in:** The Review of Symbolic Logic, Issue 11/03, 2018, Page(s) 436-469, ISSN 1755-0203  
**Publisher:** Cambridge University Press  
**DOI:** 10.1017/s1755020317000375

[Skolemization and Herbrand theorems for lattice-valued logics](#) ↗

**Author(s):** Petr Cintula, Denisa Diaconescu, George Metcalfe  
**Published in:** Theoretical Computer Science, 2019, ISSN 0304-3975  
**Publisher:** Elsevier BV  
**DOI:** 10.1016/j.tcs.2019.02.007

[An Abstract Approach to Consequence Relations](#) ↗

**Author(s):** PETR CINTULA, JOSÉ GIL-FÉREZ, TOMMASO MORASCHINI, FRANCESCO PAOLI  
**Published in:** The Review of Symbolic Logic, 2019, Page(s) 1-40, ISSN 1755-0203  
**Publisher:** Cambridge University Press  
**DOI:** 10.1017/s175502031900008x

[On the existence of free models in fuzzy universal Horn classes](#) ↗

**Author(s):** Vicent Costa, Pilar Dellunde  
**Published in:** Journal of Applied Logic, 2016, ISSN 1570-8683

**Publisher:** Elsevier BV  
**DOI:** 10.1016/j.jal.2016.11.002

[Canonical formulas for k-potent commutative, integral, residuated lattices](#) ↗

**Author(s):** Nick Bezhanishvili, Nick Galatos, Luca Spada  
**Published in:** Algebra universalis, 2017, ISSN 0002-5240  
**Publisher:** Birkhauser Verlag  
**DOI:** 10.1007/s00012-017-0430-7

## Conference proceedings (5) ▼

[Term Models of Horn Clauses over Rational Pavelka Predicate Logic](#) ↗

**Author(s):** Vicent Costa, Pilar Dellunde  
**Published in:** 2017 IEEE 47th International Symposium on Multiple-Valued Logic (ISMVL), 2017, Page(s) 112-117, ISBN 978-1-5090-5496-1  
**Publisher:** IEEE  
**DOI:** 10.1109/ismvl.2017.26

[A Logical Framework for Graded Predicates](#) ↗

**Author(s):** Petr Cintula, Carles Noguera, Nicholas J. J. Smith  
**Published in:** Lecture Notes in Computer Science, 2017, Page(s) 3-16  
**Publisher:** Springer Berlin Heidelberg  
**DOI:** 10.1007/978-3-662-55665-8\_1

[On the relation between modal and multi-modal logics over Łukasiewicz logic](#) ↗

**Author(s):** Francesc Esteva, Lluis Godo, Ricardo Oscar Rodriguez  
**Published in:** 2017 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE), 2017, Page(s) 1-6, ISBN 978-1-5090-6034-4  
**Publisher:** IEEE  
**DOI:** 10.1109/fuzz-ieee.2017.8015703

[Coherence in Modal Logic](#) ↗

**Author(s):** Kowalski, Tomasz; Metcalfe, George  
**Published in:** Advances in Modal Logic, Issue 12, 2018, Page(s) 451-464, ISBN 978-1-84890-255-8  
**Publisher:** College Publications  
**DOI:** 10.7892/boris.119774

[Proof Theory and Ordered Groups](#) ↗

**Author(s):** Almudena Colacito, George Metcalfe  
**Published in:** Lecture Notes in Computer Science, Issue 10388, 2017, Page(s) 80-91, ISBN 978-3-662-55385-5

**Publisher:** Springer Berlin Heidelberg  
**DOI:** 10.1007/978-3-662-55386-2\_6

## Book chapters (2) ▼

[Possibilistic Semantics for a Modal KD45 Extension of Gödel Fuzzy Logic](#) 

**Author(s):** Félix Bou, Francesc Esteva, Lluís Godo, Ricardo Oscar Rodriguez

**Published in:** Information Processing and Management of Uncertainty in Knowledge-Based Systems, 2016, Page(s) 123-135, ISBN 978-3-319-40581-0

**Publisher:** Springer International Publishing

**DOI:** 10.1007/978-3-319-40581-0\_11

[Fuzzy Positive Primitive Formulas](#) 

**Author(s):** Pilar Dellunde

**Published in:** Modeling Decisions for Artificial Intelligence - 15th International Conference, MDAI 2018, Mallorca, Spain, October 15–18, 2018, Proceedings, Issue 11144, 2018, Page(s) 156-168, ISBN 978-3-030-00201-5

**Publisher:** Springer International Publishing

**DOI:** 10.1007/978-3-030-00202-2\_13

## Other Research Products ▼

[Other Research Products via OpenAire \(1\)](#)



[BOOLEAN-LIKE ALGEBRAS OF FINITE DIMENSION](#) 

**Author(s):** Salibra A.; Ledda A.; Paoli F.

**Published in:** arXiv:1806.06537

**Last update:** 12 August 2022

**Permalink:** <https://cordis.europa.eu/project/id/689176/results>

European Union, 2025

