

MOL 2025

The 18th Meeting on the Mathematics of Language

Proceedings of the Conference

August 16–17, 2025
Stony Brook University
Stony Brook, NY, USA

©2025 The Association for Computational Linguistics

Order copies of this and other ACL proceedings from:

Association for Computational Linguistics (ACL)
209 N. Eighth Street
Stroudsburg, PA 18360
USA
Tel: +1-570-476-8006
Fax: +1-570-476-0860
acl@aclweb.org

ISBN 978-1-950737-19-2

Introduction

These are the proceedings of the 18th Meeting on the Mathematics of Language (MOL 2025), held at Stony Brook University on August 16–17, 2025.

The volume contains twelve regular papers, which have been selected from a total of nineteen submissions, using the EasyChair conference management system. The volume also contains one paper contributed by an invited speaker.

The conference benefited from the financial support of Stony Brook’s Department of Linguistics, the Institute for Advanced Computational Science (IACS), and the Stony Brook FAHSS fund. We gratefully acknowledge their support.

We would like to express our sincere gratitude to all the reviewers for MOL 2025 and to all the people who helped with the local organization.

Thomas Graf, Matthew Hayden, Jeffrey Heinz, Lawrence Moss, and Yang Wang (editors)

Stony Brook University

August 2025

Program Chairs:

Thomas Graf, Stony Brook University (USA)
Jeffrey Heinz, Stony Brook University (USA)
Lawrence Moss, Indiana University Bloomington (USA)
Yang Wang, University of Utah (USA)

Organizing Chairs:

Thomas Graf, Stony Brook University (USA)
Jeffrey Heinz, Stony Brook University (USA)

Technical Editor of Proceedings:

Matthew Hayden, Stony Brook University (USA)

Program Committee:

Siddharth Bhaskar, University of Southern Denmark (Denmark)
Alexander Clark, University of Gothenburg (Sweden)
Aniello De Santo, University of Utah (USA)
Frank Drewes, Umeå University (Sweden)
Remi Eyraud, CNRS & Jean Monnet University (France)
Robert Frank, Yale University (USA)
Philippe de Groote, INRIA Nancy – Grand Est (France)
Tim Hunter, University of California Los Angeles (USA)
Adam Jardine, Rutgers University (USA)
Greg Kobele, University of Leipzig (Germany)
Andras Kornai, Budapest Institute of Technology (Hungary)
Yusuke Kubota, National Institute for Japanese Language and Linguistics (Japan)
Giorgio Magri, CNRS (France)
Jens Michaelis, University of Bielefeld (Germany)
Gerald Penn, University of Toronto (Canada)
Owen Rambow, Stony Brook University (USA)
Mehrnoosh Sadrzadeh, University College London (UK)
Giorgio Satta, University of Padua (Italy)
Yoad Winter, Utrecht University (Netherlands)

Invited Speakers:

Sophie Hao, Boston University (USA)
Makoto Kanazawa, Hosei University (Japan)
Edward P. Stabler (Canada)
Lena Strobl, Yale University (USA)

Table of Contents

Realizational Morphology in a Modular Minimalist Grammar	1
<i>Edward P. Stabler</i>	
The Typology of TSL Case Assignment	16
<i>Kenneth Hanson</i>	
Learning Multi Tier-Based Strictly 2-Local Languages	33
<i>Logan Swanson</i>	
A Framework for Learning Phonological Maps as Logical Transductions	44
<i>Tatevik Yolyan</i>	
On the Structure of Sets Testable in the Strict Sense	59
<i>Dakotah Lambert</i>	
A Lie-Algebraic Perspective on Tree-Adjoining Grammars	74
<i>Isabella Senturia, Elizabeth Xiao and Matilde Marcolli</i>	
Derivational and Interpretational Equivalence of LIG and HG	88
<i>Kalen Chang</i>	
On the Logic of LGB Type Structures. Part II: Reentrancy Structures	102
<i>Marcus Kracht</i>	
Conditions for Global Asymptotic Dominance in Multidimensional Grammar Competition	114
<i>Henri Kauhanen</i>	
A Full Numerical Rank Basis Selection Algorithm for Spectral Learning	126
<i>Yibin Zhao and Gerald Penn</i>	
Existence as Positive Measurement: Mass Nouns and Intensionality	137
<i>Junri Shimada</i>	
The Computational Complexity of Quantifier Raising	150
<i>Edward Sanger</i>	
Dependency Structures Representation: Meaning Text Theory’s Deep-Syntax Encoding with Abstract Categorical Grammars	163
<i>Marie Cousin</i>	