ITC Conference Grant
- APPLICATION FORM[1] -

Action number: CA20111

Applicant name: Cheng-Syuan Wan

Conference Details

Conference title: Proof, Argumentation, Computation, Modalities And Negation (PACM∧N)

Conference web-page: https://sites.google.com/view/pacman2025-rome/

Conference venue[2]: Università degli Studi "Roma Tre", Rome, Italy

Conference start and end date: 14/05/2025 to 16/05/2025

Accepted contribution details

Title of the presentation: Proof Theory of Semi-Associative Substructural Logics

Type of the presentation: oral

Co-authors: The talk is based on several works, some of which are joint work with Tarmo Uustalu and Niccolò Veltri.

Abstract:

In this talk, we introduce a series of results on semi-associative substructural logics, which are a family of logics that are situated between the associative and non-associative Lambek calculus.

These logics are motivated by recent work on skew monoidal categories which are from both mathematics and programming language semantics. These categories are a weaker version of monoidal categories, in the sense that the three structural laws of left and right unitality and associativity are not required to be invertible. They are merely natural transformations with a specific orientation.

We will focus on the sequent calculi, normalization via focusing, and (proof-relevant) interpolation of semi-associative substructural logics.

Other details of the presentation: specify here any additional details related to the contribution (e.g. title of the session / track of the conference programme in which the contribution is accepted)

Relevance of the Conference topic to the Action

Description of the relevance of the Conference to the Action (e.g., MoU objective, deliverable or WG task).

(max.500 word)

1 This form is part of the application for a grant to present the work of the applicant at a conference. It is submitted to the COST Action MC via e-COST. The Grant Awarding Coordinator coordinates the evaluation on behalf of the Action MC and informs the Grant Holder of the result of the evaluation for issuing the Grant Letter.

2 For an online conference, specify virtual participation; for hybrid conferences, specify whether it is an in-person or virtual participation.

The Proof, Argumentation, Computation, Modalities And Negation (PACM∧N) workshop is highly relevant to COST Action CA20111, EuroProofNet. This workshop directly addresses the core objectives of EuroProofNet, which include boosting the interoperability and usability of proof systems. The topics covered, such as proof theory, computability, complexity, and logics of proofs, align closely with the interests of Working Groups 2 and 3 of the Action.

Specifically, my presentation on the proof theory of semi-associative substructural logics directly contributes to the EuroProofNet objectives of both WG2 and WG3.
On the one hand, my work focuses on weak substructural logics that are inspired by the research in programming language semantics. On the other hand, my work consists of a part of machine checked proof, i.e. formalizing proof systems and prove logical properties in Agda. The workshop provides an opportunity to discuss these advancements with leading researchers in the field and to gain valuable feedback.

Applicant enters max. 500 word summary here.

Motivation and expected impact

Description of the applicant's motivation to participate in the conference and potential impact on the applicant's career.

(max.500 word)

As a young researcher invited to present my work at the PACM∧N workshop, I take this as a valuable opportunity to engage with established experts in my field. Given the record of last year's workshop, I anticipate engaging with well-established researchers and gaining insights into their current work. This participation will likely lead to new collaborations and strengthen potential research directions. Presenting my research at this workshop will enhance the visibility of my work within the research community. I am particularly interested in receiving constructive feedback that can further refine my research and in expanding my knowledge. I expect that the insights and connections gained at PACM∧N will have a positive impact on my career.

Applicant enters max. 500 word summary here.