



## LOGIC AND COMPUTATION

### Propositional Proofs Compression.

**Chelsea Edmonds**  
(University of Sheffield)

Thursday, February 8, 2024.  
14h - 15h

Math Department- Mini Auditorium

#### **Abstract.**

Formalised mathematics has historically focussed on the goal of formalising specific well-known theorems, which can lead to issues around reusability and accessibility, especially as formal libraries continue to grow at a rapid pace. My work on formalising combinatorics in Isabelle/HOL presents an approach which places the primary focus on the formalisation of proof techniques and underlying structures, making use of locales, Isabelle's module system. In this talk, I'll give an introduction to the locale-centric methodology for formalising mathematical structures to create flexible, modular and extensible libraries. Additionally, I'll demonstrate how the same locale-centric methods can be applied to set up proof contexts to support general proof techniques. I'll conclude by demonstrating an example probabilistic technique to formalise some results on hypergraphs.