Clonoids and uniform generation by minors

Michael Kompatscher (kompatscher@karlin.mff.cuni.cz)
Charles University Prague

Let $\mathbf{A}$ and $\mathbf{B}$ be two algebraic structures with universes A and B. Then, a *clonoid from* $\mathbf{A}$ *to* $\mathbf{B}$ is a set of finitary operations from A to B that is closed under composition with the term operations of $\mathbf{A}$ (on the domain side) and $\mathbf{B}$ (on the codomain side). In recent years there has been a number of classification results of clonoids for fixed $\mathbf{A}$ and $\mathbf{B}$.

In the first part of my talk, I would like to discuss the notion of "uniform generation" of operations by n-ary $(\mathbf{A}, \mathbf{B})$-minors that was introduced by Mayr and Wynne in 2024, and show how it can be used to simplify several of the know classification results. In the second part, I will use these techniques to show that all clonoids from a finite vector space to a module of coprime order are finitely generated.

This is joint work with Stefano Fioravanti and Bernardo Rossi.