

# Is There Hope?

*Monday, 19 August 2024 10:55 (25 minutes)*

We know the excluded minors for the matroids representable over  $\text{GF}(2)$ ,  $\text{GF}(3)$  and  $\text{GF}(4)$ . What are the chances of explicitly finding the excluded minors for matroids representable over  $\text{GF}(5)$ ?

We have an excellent understanding of the classes that arise when we consider matroids representable over  $\text{GF}(2)$  and other fields. We also have an algebraic understanding of the classes that arise for matroids representable over  $\text{GF}(3)$  and other fields. What are the chances of describing the classes for  $\text{GF}(4)$  and other fields?

Recent explicit descriptions of the excluded minors for the class of 2-regular matroids and 3-regular matroids (almost) can be thought of as baby steps towards the resolution of the questions posed above. But let's be real, is there genuine hope?

**Primary author:** WHITTLE, Geoff (Victoria University)

**Presenter:** WHITTLE, Geoff (Victoria University)