

Free group of Hamel functions

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Given a function $f : \mathbb{R} \rightarrow \mathbb{R}$ we say that f is a Hamel function if it is a \mathbb{Q} -basis of the linear space \mathbb{R}^2 . In paper [1] Authors provided constructions of some Hamel functions with additional properties. Among others, they have constructed a Hamel autobijection of \mathbb{R} . Developing their ideas we have constructed a free group of \mathfrak{c} generators of Hamel autobijections of \mathbb{R} . During my talk I will cite the basic tools which we used, sketch the construction of such a free group and sum up with some open questions. This is a joint work with M. Pawlikowski (Lodz University of Technology), Sz. Smolarek (Lodz University of Technology) and J. Swaczyna (Lodz University of Technology).

References

- [1] G. Matusik, T. Natkaniec, *Algebraic properties of Hamel functions*, Acta Math. Hungar., 126 (3), 2010, 209-229.