## Fractal dimension and common hypercyclicity

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It is well known that all multiples of the backward shift  $\lambda B$  with  $|\lambda| > 1$  possess a common hypercyclic vector in  $\ell^p$ , i.e. a vector whose orbit is dense in  $\ell^p$  under the action of each of these operator [1]. However this is no longer the case if we consider the whole family  $(\lambda B \times \mu B)_{|\lambda|,|\mu|>1}$ . One can therefore wonder for which subsets of this family we can guarantee the existence of a common hypercyclic vector. The first answers to this question surprisingly rely on the fractal dimension of the considered subset of parameters [2].

## References

- E. Abakumov and J. Gordon. Common hypercyclic vectors for multiples of backward shift. J. Funct. Anal. 200 (2003), 494-504.
- [2] F. Bayart, F. Costa Jr. and Q. Menet. Common hypercyclic vectors and dimension of the parameter set. Indiana Univ. Math. J. 71 (2022), 1763-1795.

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