AN OVERLAPPING GENERALIZATION OF BEDFORD-MCMULLEN CARPETS

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We study the dimensions of a family of self-affine sets generalizing Bedford-McMullen carpets. More specifically we fix a Bedford-McMullen system and allow both vertical and horizontal translations, while preserving the rows and columns structure. The alignment kept in the construction lets us give formulas for the Hausdorff, packing and box dimensions outside of a small set of exceptional translations. These formulae will coincide with those for the non-overlapping case, and thus provide us with examples where the box-counting and Hausdorff dimension do not necessarily agree. These results rely on M. Hochman's recent work on the dimensions of self-similar sets and measures, and can be seen as an extension of J. Fraser and P. Shmerkin results for Bedford-McMullen carpets with column overlapping.

REFERENCES

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