

Coxeter groups with the n -dimensional Sierpinski compacta as boundaries

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The n -dimensional Sierpiński compacta are some natural higher dimensional analogs of the Sierpiński curve. For any positive integer n we will show that the right angled Coxeter systems from some vast family have the property that the visual (i.e., CAT(0)) boundary of the associated Coxeter–Davis complex is homeomorphic to the n -dimensional Sierpiński compactum. We will also present some aspects of the proof, in which we confront all the difficulties involved in dealing with boundaries of spaces that are metrically singular, not necessarily hyperbolic (in the sense of Gromov), and whose expected boundaries have no convenient characterization in terms of a list of topological properties.

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