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THE SPACE-SCALE CUBE: AN INTEGRATED MODEL FOR 2D POLYGONAL AREAS AND SCALE

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Abstract. This paper introduces the concept of a space-scale partition, which we term the *space-scale cube* – analogous with the space-time cube (first introduced by Hägerstrand, 1970). We take the view of '"map generalization is extrusion of 2D data into the third dimension" (as introduced by Vermeij et al., 2003). An axiomatic approach formalizes the validity of the partition of space in three dimensions (2D space plus 1D scale). Furthermore the paper provides insights in how to: 1. obtain valid data for the cube, 2. obtain a valid 2D polygonal map at variable scale from the cube and 3. which other possibilities the cube brings for obtaining maps having different map scales over their domain (which we term *mixed-scale* maps).

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