

Properties of a convex path

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In this talk we present the first steps for the reconstruction of digitally convex polyomino P . The boundary of a digitally convex polyomino P is a convex path that is a word whose Lyndon factorization is composed by Christoffel words. In another words, the factorization is made of Christoffel words with a decreasing order of slopes. Based on this idea, we recall some characteristics of Lyndon and Christoffel words and we explore some of their properties. Those properties allow us to perturb the path in order to maintain the convexity of the polyomino P .