Lama Tarsissi, *Univ. Paris Est Marne La Vallée*
Title: Inflation of digitally convex polyominoes

Abstract
In the literature, many papers introduced and studied different convexity notions. For example, Kim and Rosenfeld investigated different notions of discrete convex sets, where a set in Euclidean geometry is convex if and only if for any pair of points p1, p2 in a region R, the line segment joining them is completely included in R. In discrete geometry on square grids, this notion refers to the digitally convex convexity. We recall that a polyomino is a finite 4-connected set of unit squares in the lattice Z^2 . If P is a polyomino and if for all p1, p2 inside P and such that the discrete segment joining them is completely included in P then P is a digitally convex polyomino. Digitally convex polyominoes are also the discretization of convex sets of R^2 , except when this discretization is not 4-connected. It implies that the intersection of two such polyominoes is also digitally convex, as soon as it is 4-connected. In this talk, we would like to study discrete geometrical constructions to deflate or inflate digitally convex polyominoes.