

# Independent bond percolation on $Z^2$ with one-dimensional inhomogeneities

M. Hilário <sup>1</sup>

<sup>1</sup> UFMG

## Resumo/Abstract:

We study bond percolation on the square lattice with one-dimensional inhomogeneities. Inhomogeneities are introduced in the following way: A vertical column on the square lattice is the set of vertical edges that project to the same vertex on  $Z$ . Select vertical columns at random independently with a given positive probability. Keep (resp. remove) vertical edges in the selected columns, with probability  $p$ , (resp.  $1 - p$ ). All horizontal edges and vertical edges lying in unselected columns are kept (resp. removed) with probability  $q$ , (resp.  $1 - q$ ). We show that, if  $p > p_c(Z^2)$  (the critical point for homogeneous Bernoulli bond percolation) then  $q$  can be taken strictly smaller than  $p_c(Z^2)$  in such a way that the probability that the origin percolates is still positive.

(joint work with Hugo Duminil-Copin, Gady Kozma and Vladas Sidoravicius).