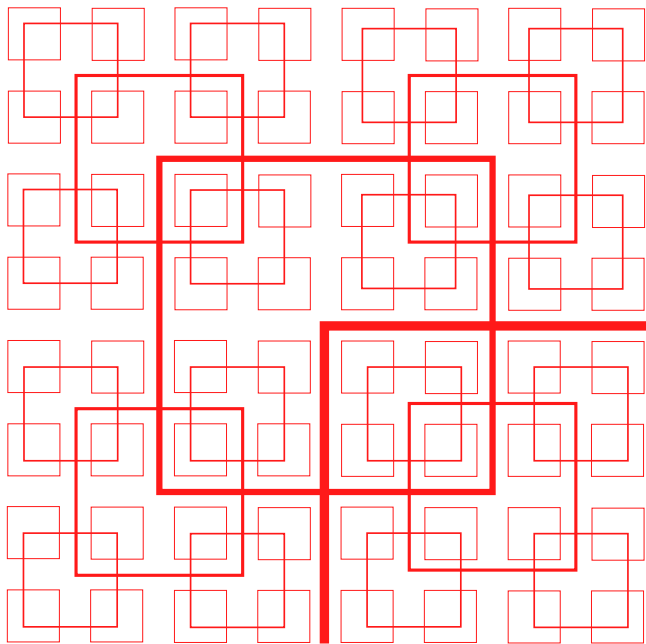
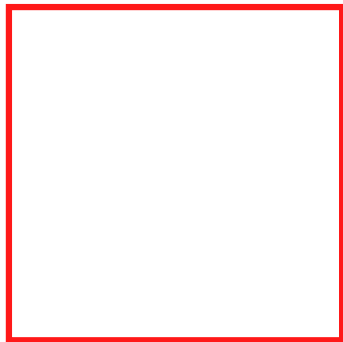
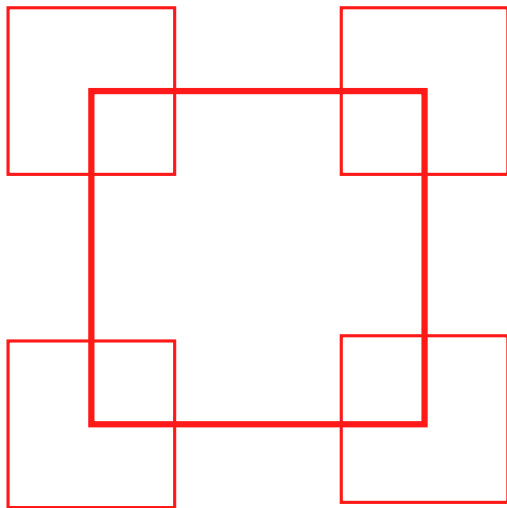


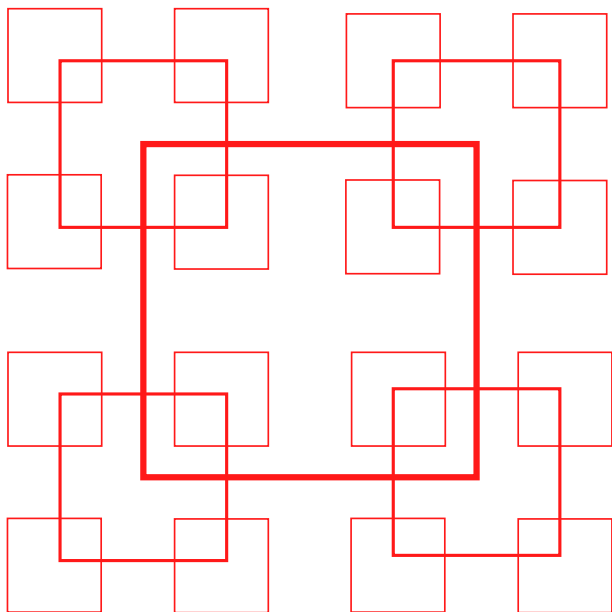
Computations: from Turing Machines to Tilings

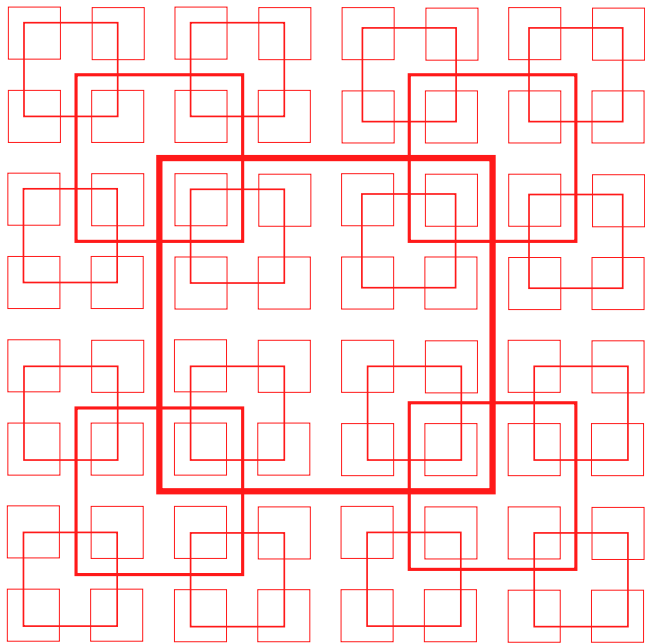
Guilhem Gamard and **Daria Pchelina**



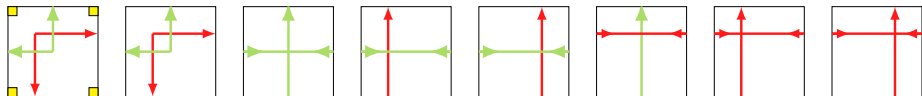




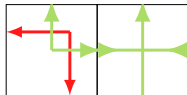
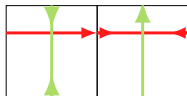
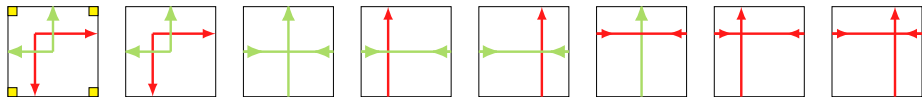




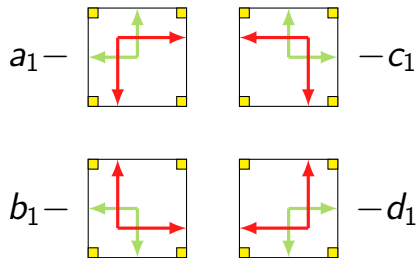
Robinson tileset



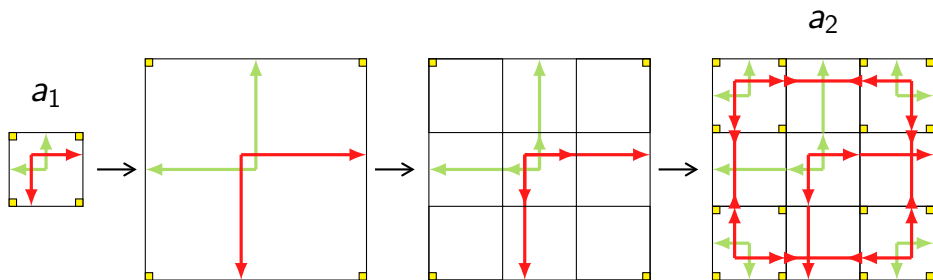
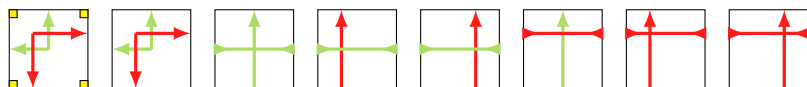
Robinson tileset



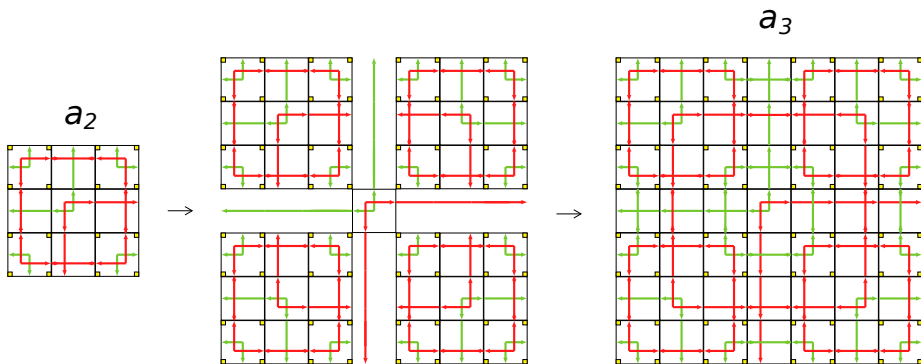
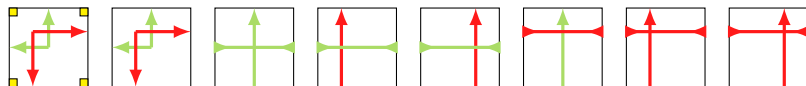
Orientations



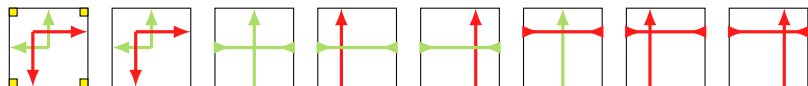
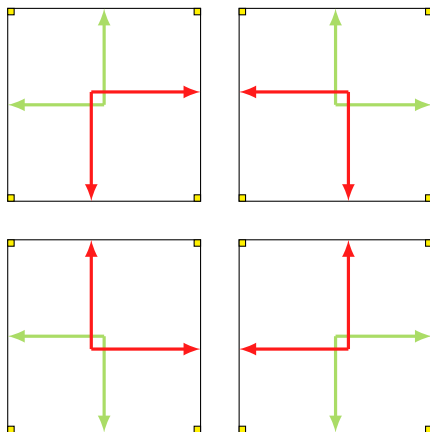
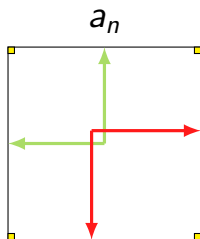
Macro-tile of level 2



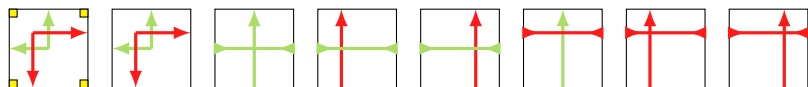
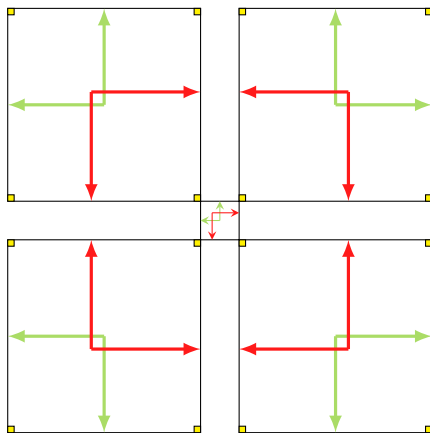
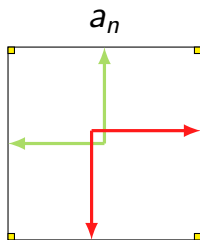
Macro-tile of level 3



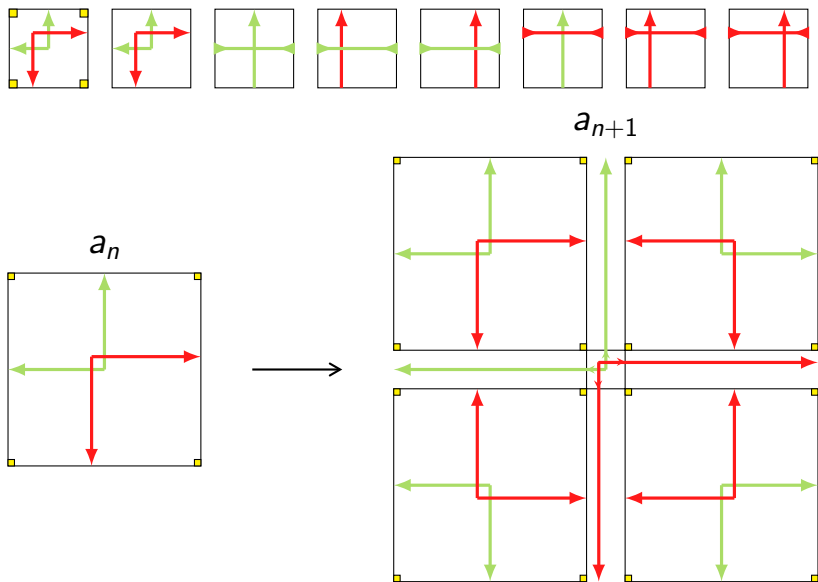
Macro-tile of level $n+1$


 a_{n+1}


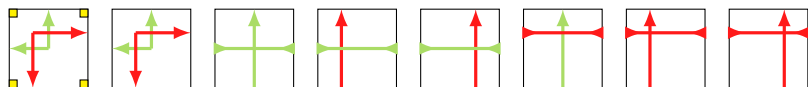
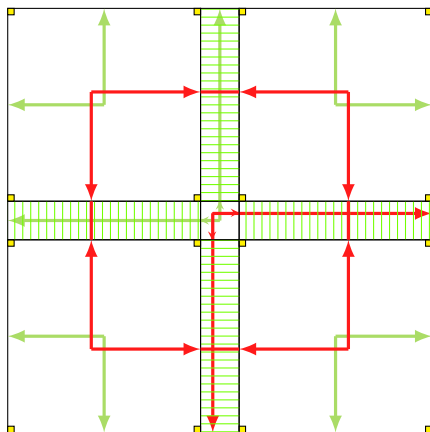
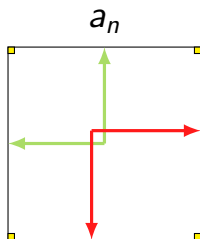
Macro-tile of level $n+1$


 a_{n+1}


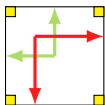
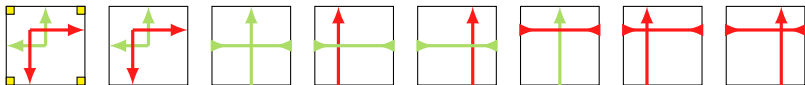
Macro-tile of level $n+1$



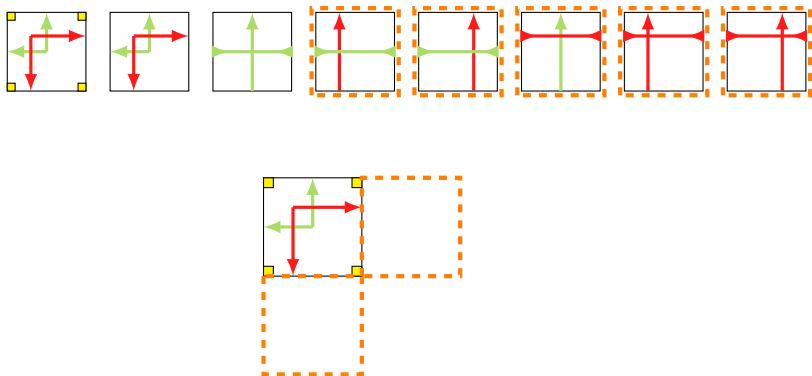
Macro-tile of level $n+1$


 a_{n+1}


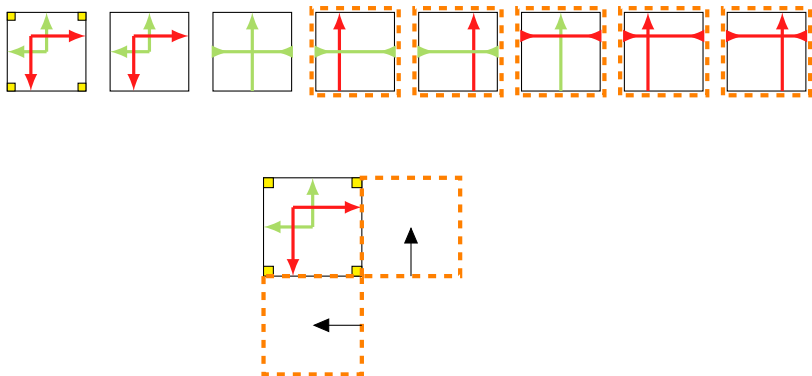
Local rules force macro-tiles of level 2



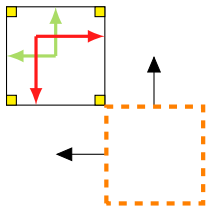
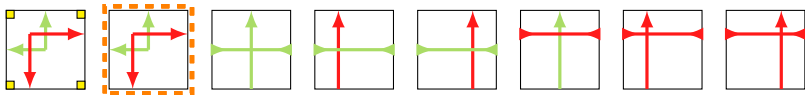
Local rules force macro-tiles of level 2



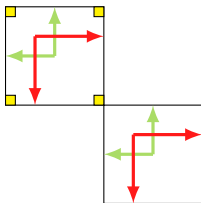
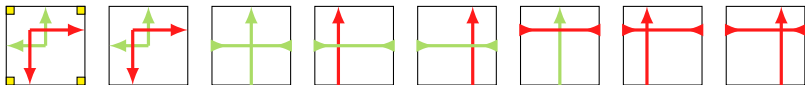
Local rules force macro-tiles of level 2



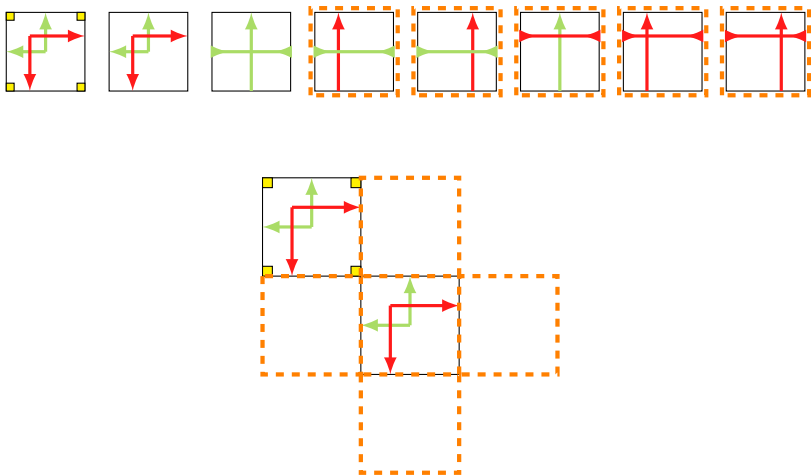
Local rules force macro-tiles of level 2



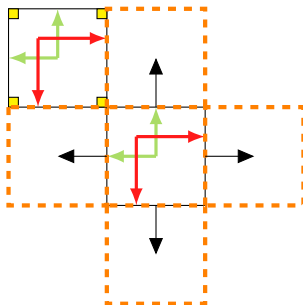
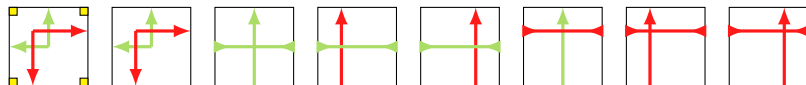
Local rules force macro-tiles of level 2



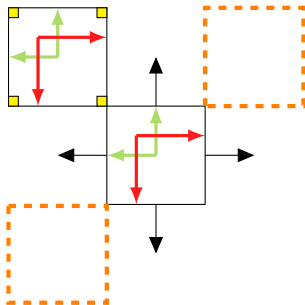
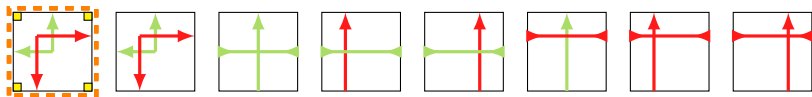
Local rules force macro-tiles of level 2



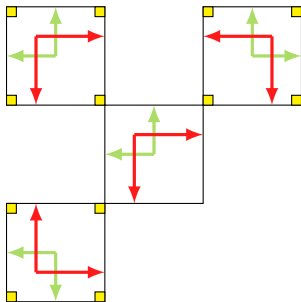
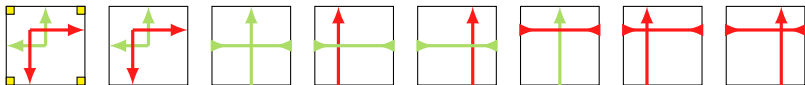
Local rules force macro-tiles of level 2



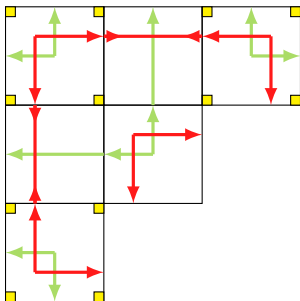
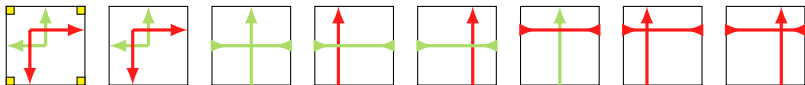
Local rules force macro-tiles of level 2



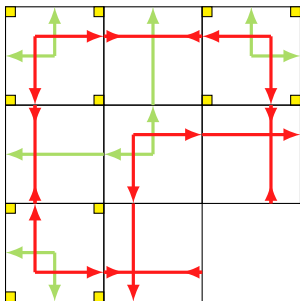
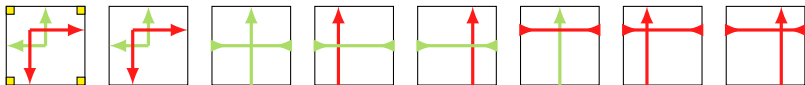
Local rules force macro-tiles of level 2



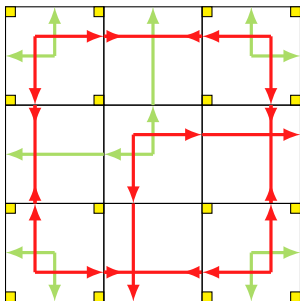
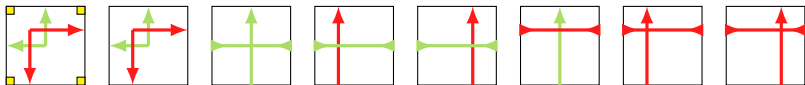
Local rules force macro-tiles of level 2



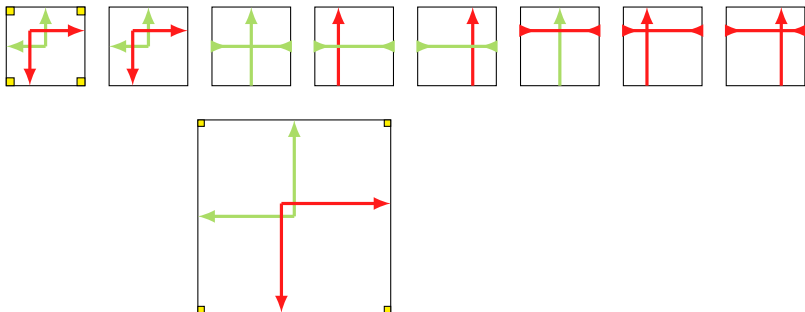
Local rules force macro-tiles of level 2



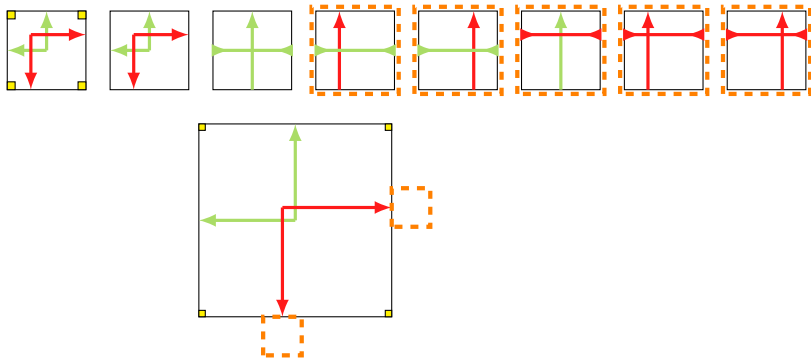
Local rules force macro-tiles of level 2



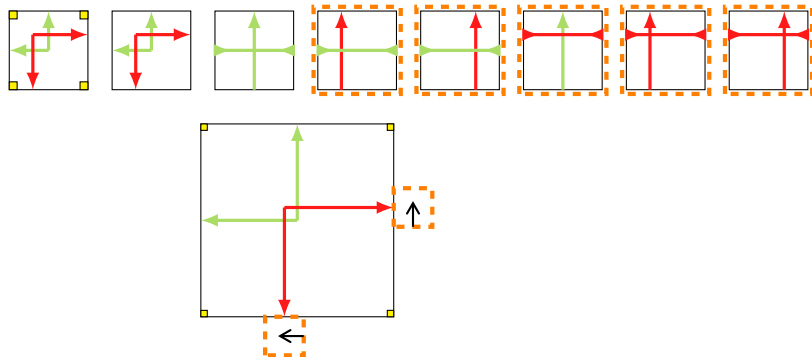
Local rules force macro-tiles of level $n+1$



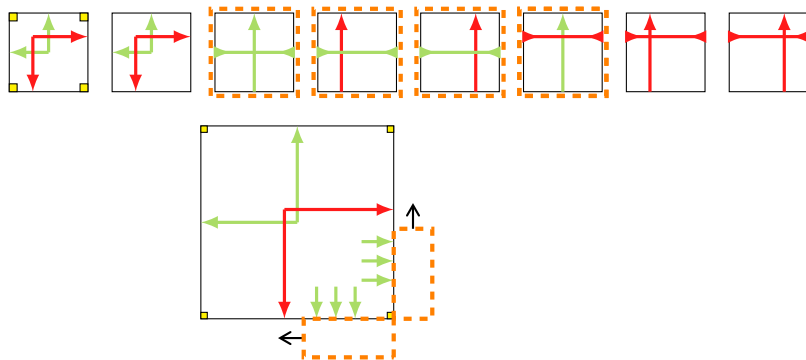
Local rules force macro-tiles of level $n+1$



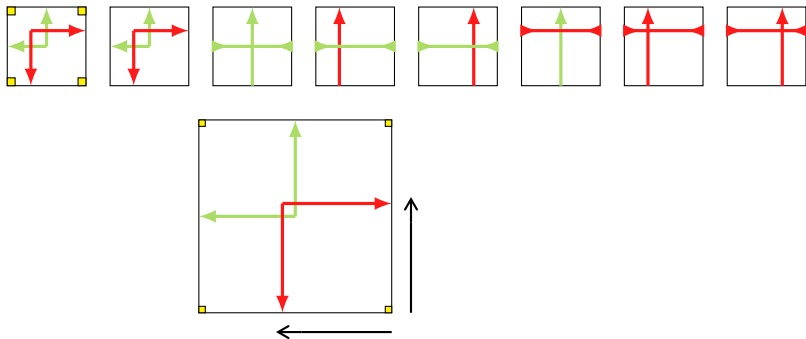
Local rules force macro-tiles of level $n+1$



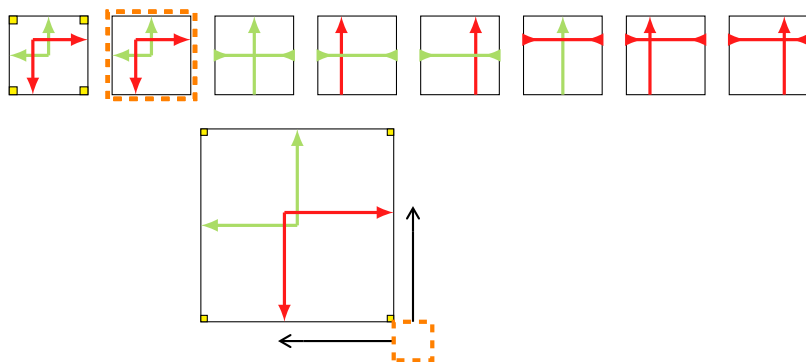
Local rules force macro-tiles of level $n+1$



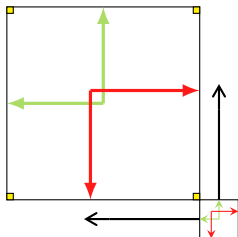
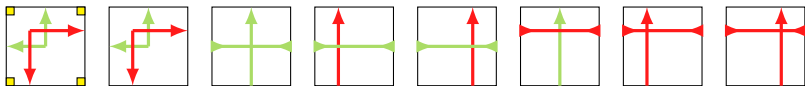
Local rules force macro-tiles of level $n+1$



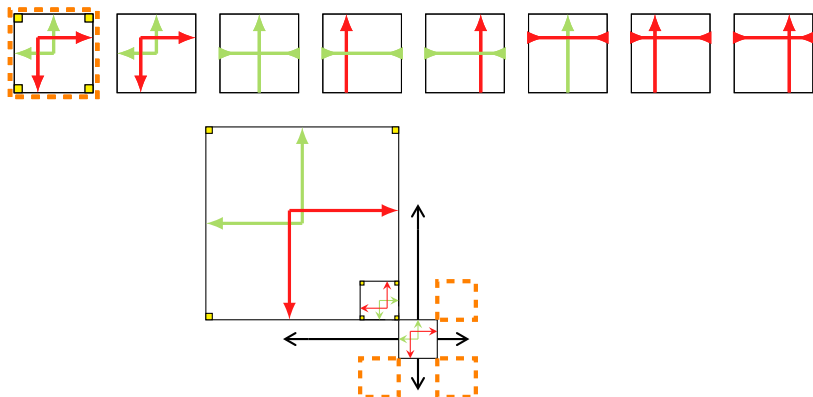
Local rules force macro-tiles of level $n+1$



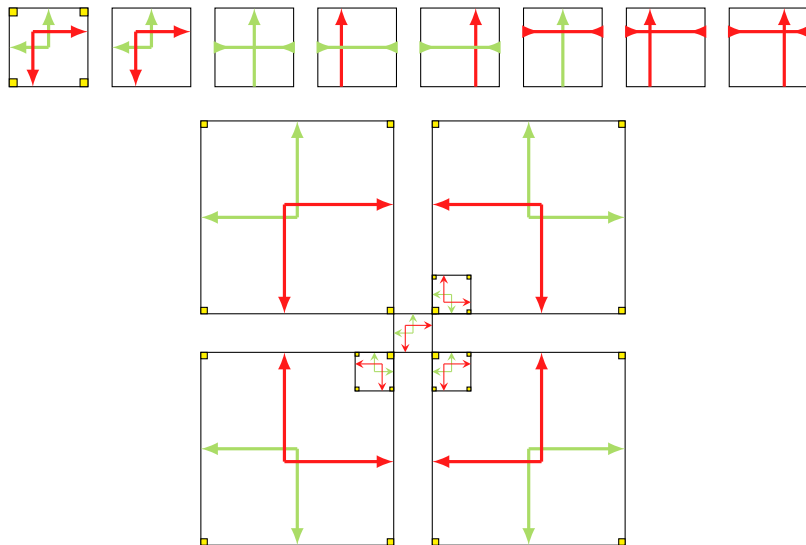
Local rules force macro-tiles of level $n+1$



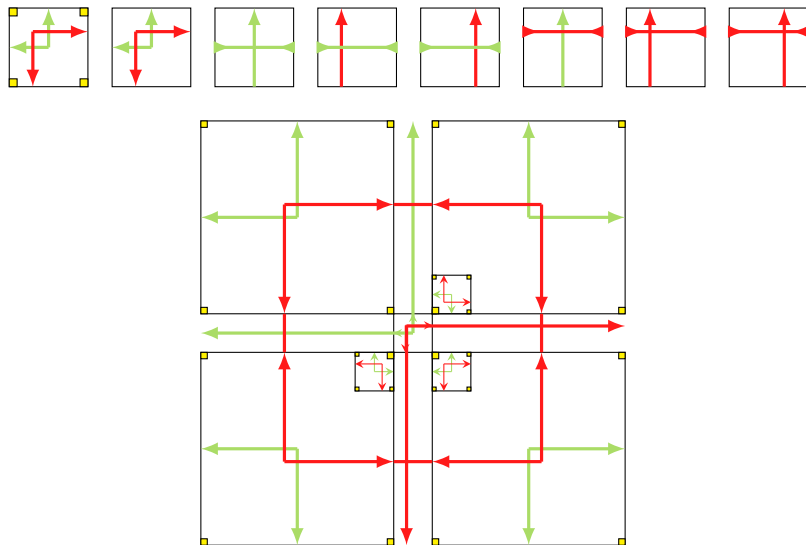
Local rules force macro-tiles of level $n+1$

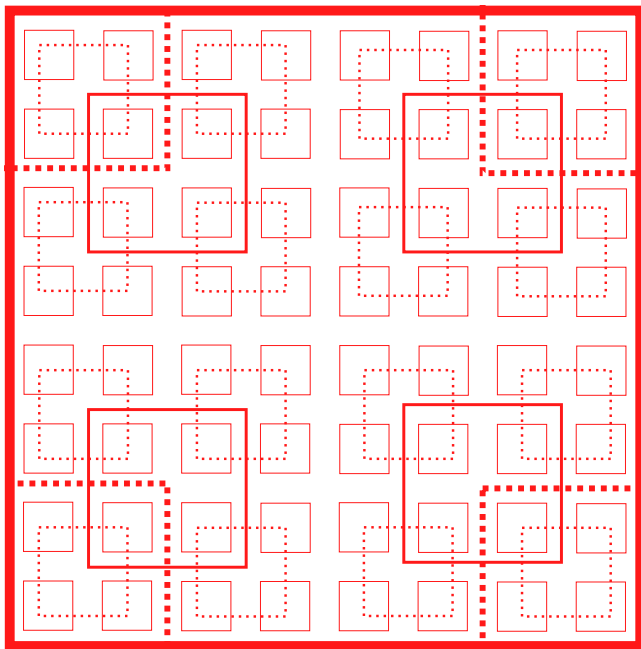


Local rules force macro-tiles of level $n+1$

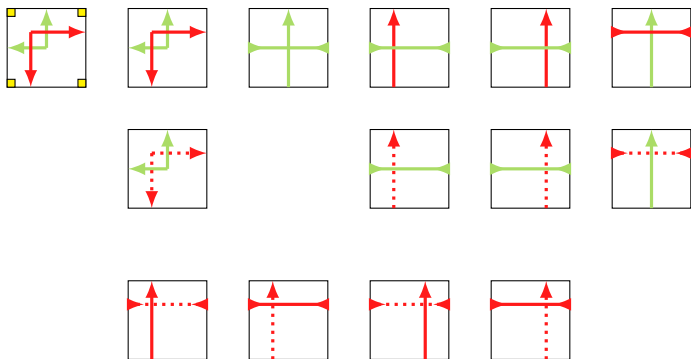


Local rules force macro-tiles of level $n+1$

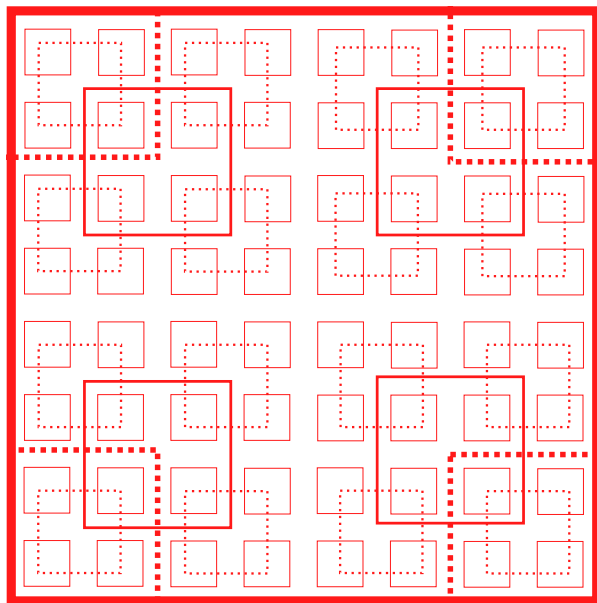




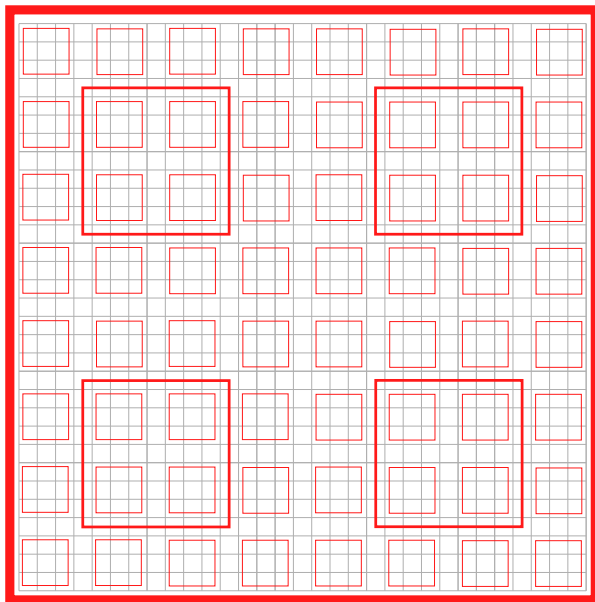
Extended Robinson tileset



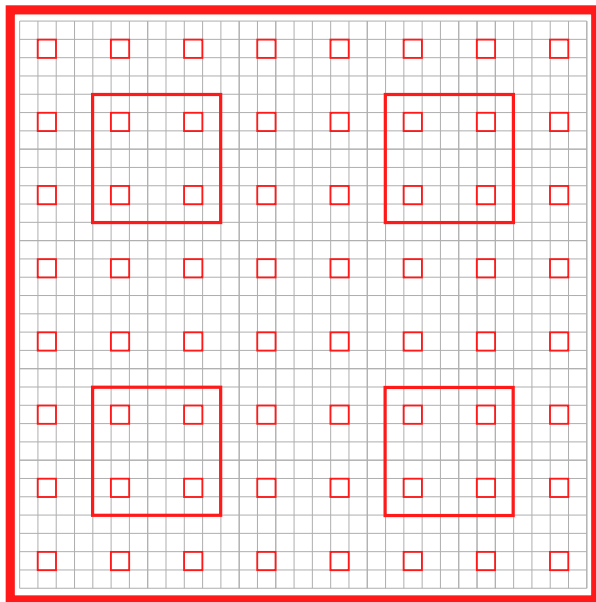
Extended Robinson tileset



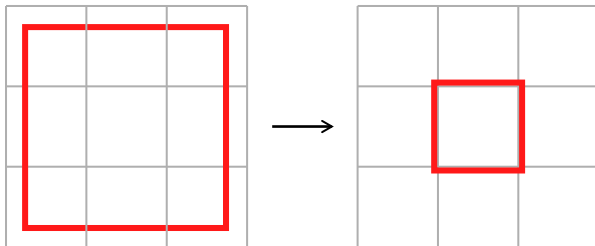
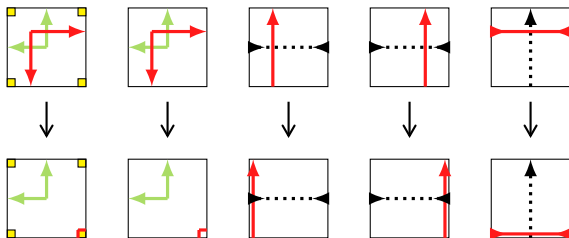
Shifting red lines



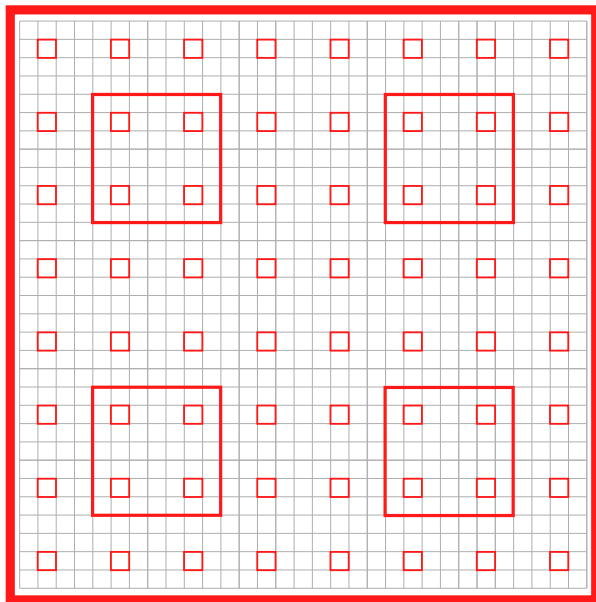
Shifting red lines



Shifting red lines

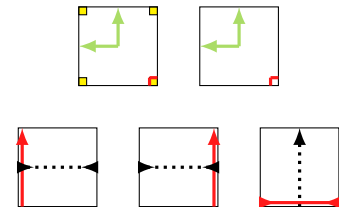


Shifting red lines

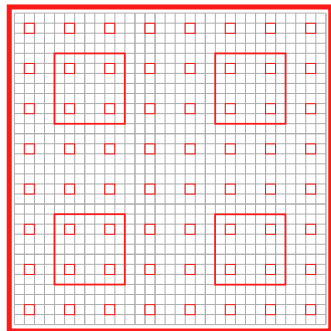


Product of 2 tilesets

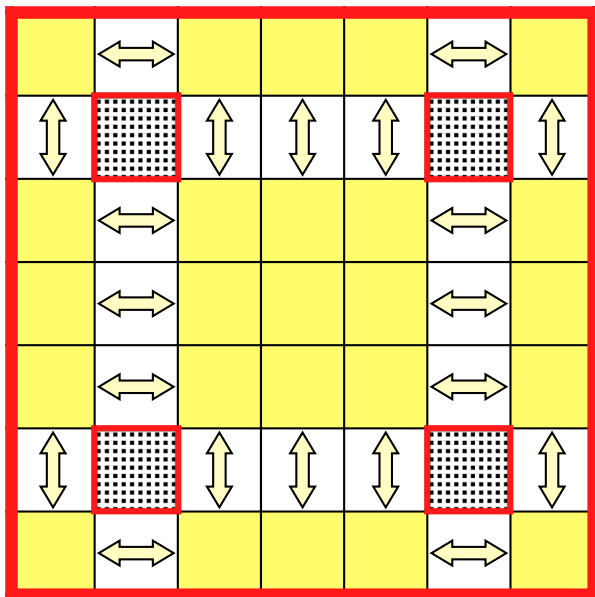
$$T_5 = \left\{ \begin{array}{c} (t_4, x', v') \\ (t_2, y, v) \quad \square \quad (t_3, y, v) \\ (t_1, x, v) \end{array} \right\}$$


 \times

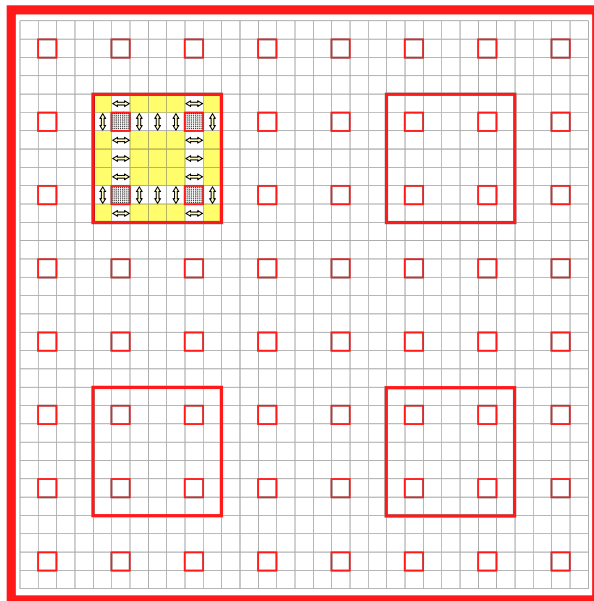
	1	1	1	1	0	0	0	0	0
	1	1	1	0	0	0	0	0	0
	1	1	1	0	0	0	0	0	0
	1	1	0	0	0	0	0	0	0
	1	1	0	0	0	0	0	0	0
	1	0	0	0	0	0	0	0	0
	1	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0



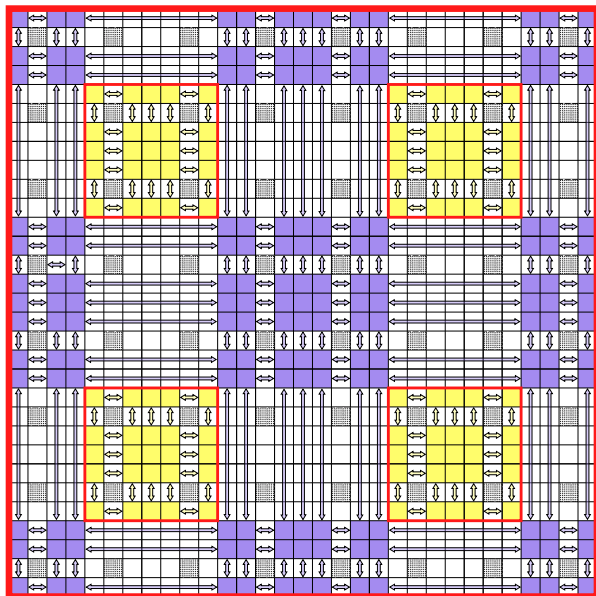
Product of 2 tilesets



Product of 2 tilesets



Product of 2 tilesets



Now you know that the Domino Problem cannot be solved by a computer.

Have a good day! :-)