Project 4: Scale the Wall

ER02

January 20, 2017

Abstract

Design a tile set that climbs up a wall.

Recall that a tile assembly system $\mathcal{T} = (T, \sigma, \tau)$ consists of a tile set T, a seed tile $\sigma \in T$ and a temperature $\tau \in \mathbb{N}$.

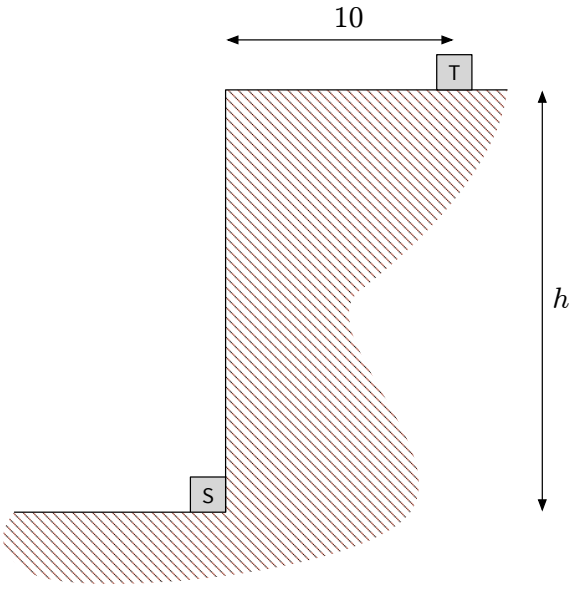

Figure 1: A wall of height h.

Problem. Can you find a tile assembly system $\mathcal{T}$ for the abstract Tile Assembly Model (aTAM) where the rules are as follows?

- The seed tile is placed at position $S = (0, 0)$
- For all $h \in \mathbb{N}$ every terminal assembly of $\mathcal{T}$ should place a tile at the target position $T = (10, h)$ and be of finite size
- $\mathcal{T}$ may not place tiles to the right and below the cut of the plane shown in Figure 1.
- You may give an infinite sequence of glues such that the h-prefix of that sequence will appear on the wall, to help the tiles 'climb up'.