

**Title:** On Packing Triangles into a Unit Strip

**ABSTRACT**

Packing a given set of convex polygons in a rectangular strip of unit width by using the least possible length is an important problem with several applications. An APTAS is known in the case when all the polygons are rectangles and we restrict to axis-parallel packings. However in the case of general convex polygons, or when arbitrary rotations are allowed, existing algorithms are mostly heuristic in nature.

We hope to take a step in the direction of proving good guarantees in such cases. When all the polygons are *triangles* and arbitrary rotations are allowed, we give an algorithm with an asymptotic approximation ratio of  $4/3$ . Further, if all triangles are *thin*, i.e. have 'height' (by which we mean the length of the smallest altitude) at most  $1/k$  for some positive integer  $k$ , then the algorithm has an asymptotic approximation ratio at most  $\big(1+\frac{1}{k(k+2)}\big)$ .

This is joint work with Aditya Bhaskara.