Variables:

number of walls, for now: 4.

set of all points. The points are represented as a pair: where: is defined as the angle of the point relative to an initial observation (do we assume all the points are in the same plane? if not then is a vector of angels) in radians, is the distance from the camera (starts at ).

set of all points between the angles (if this becomes ).

The *1-line mean* of a set of points is the line that minimized its sum of squared distance over the points = the first singular vector.

the cost of = the sum of squared distances to the 1-line-mean of .

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The goal is to compute a vector  of angles that minimizes where .

The output corresponds to k lines in the plane. Compute the intersection of the ith line with the i+1th line (here  is replaced by 1) for i=1..k. If there is no such intersection point (the lines are the same or parallel) output "not result". Otherwise connect the ith point with the (i+1)th point.