1041-52-163 **Imre Barany*** (barany@renyi.hu), Renyi Institute, 13 Realtanoda Street, Budapest, 1053, Hungary. *Simultaneous partitions by convex pieces.* Preliminary report.

A convex k-partition of the plane is a collection of k internally disjoint convex sets $P_1, \ldots, P_k$ whose union is the the whole plane. A recent question, raised by Nandakumar and Ramanda Rao, asks that, given a convex body C in the plane and an integer $k \geq 2$, is there a convex k-partition, $P_1, \ldots, P_k$, of the plane such that the area and the perimeter of each of the k (convex) pieces $P_i \cap C$ is equal. The case $k = 2$ is very simple. I'll sketch the solution when $k = 3$. The methods use equivariant topology with a some extra features from convex geometry. (Received August 10, 2008)