

# Dömötör Pálvölgyi

Eötvös Loránd University

## NCIS: RAMSEY - A NEARCIRCUMSPHERE-RAMSEY THEOREM FOR SOLVABLE TRANSITIVE CONFIGURATIONS

My talk will cover a new result in Euclidean Ramsey Theory, that every  $r$ -coloring of a sufficiently high-dimensional sphere of radius slightly larger than the circumradius of  $P$  contains a monochromatic congruent copy of  $P$ , assuming that  $P$  is a finite spherical set that admits a solvable group of isometries acting transitively on  $P$ . The proof builds on Kříž's group-theoretic argument and combines it with a topological method that may be of independent interest. In particular, I will show that if  $n - 3k > C(r)$ , then for every  $r$ -coloring of the directed edges of the Kneser graph there will be  $(A, B)$  and  $(B, C)$  that receive the same color, where  $A, B, C$  are pairwise disjoint  $k$ -sets from  $\{1, \dots, n\}$ . I will attempt to present the main ideas without requiring any prior knowledge. Anyone interested in the details, or planning to leave early, can read the paper [here](#).