Emergent Research:
The PIMS Postdoctoral Fellow Seminar

Jan 26, 2022 | 9:30am Pacific

Pacific Institute *for the* Mathematical Sciences

EKR-Module Property

ABSTRACT:
Let G be a finite group acting transitively on X. We say $g,h \in G$ are intersecting if gh^{-1} fixes a point in X. A subset S of G is said to be an intersecting set if every pair of elements in S intersect. Cosets of point stabilizers are canonical examples of intersecting sets. The group action version of the classical Erdos-Ko-Rado problem asks about the size and characterization of intersecting sets of maximum possible size. A group action is said to satisfy the EKR property if the size of every intersecting set is bounded above by the size of a point stabilizer. A group action is said to satisfy the strict-EKR property if every maximum intersecting set is a coset of a point stabilizer. It is an active line of research to find group actions satisfying these properties. It was shown that all 2-transitive satisfy the EKR property. While some 2-transitive groups satisfy the strict-EKR property, not all of them do. However a recent result shows that all 2-transitive groups satisfy the slightly weaker "EKR-module property"(EKRM), that is, the characteristic vector of a maximum intersecting set is a linear span of characteristic vectors of cosets of point stabilizers. We will discuss about a few more infinite classes of group actions that satisfy the EKRM property. I will also provide a few non-examples and a characterization of the EKRM property using characters of G .

For more information and registration:
https://www.pims.math.ca/seminars/PIMSPDF

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SPEAKER BIO:
Venkata Pantangi obtained a BS-MS dual degree from IISER Pune in 2012. In 2019 he obtained a doctorate from the University of Florida, under the supervision of Professor Peter Sin. From 2019-2021, he worked as a postdoc at the Southern University of Science and Technology in China, under the mentorship of Professor Cai-Heng Li. Currently, he is a PIMS CRG postdoc at the University of Lethbridge, under the supervision of Professor Joy Morris, and is a member of the CRG on Movement and Symmetry in Graphs.

ABOUT PIMS PDF SEMINARS:
PIMS ongoing lecture series featuring our Postdoctoral Fellows every three weeks. You will have the opportunity to connect with emerging research in the mathematical sciences from a PIMS Postdoctoral Fellow. PIMS PDFs are amongst the top young researchers in Canada, and this is an excellent opportunity to learn about them, and their work.