

VCU Discrete Mathematics Seminar

Homomorphisms of Strongly Regular Graphs

Dr David Roberson
University College, London

Wednesday, Nov. 2
1:00-1:50
4145 Harris Hall

We prove that if G and H are primitive strongly regular graphs with the same parameters and φ is a homomorphism from G to H , then φ is either an isomorphism or a coloring (homomorphism to a complete subgraph). Moreover, any such coloring is optimal for G and its image is a maximum clique of H . Therefore, the only endomorphisms of a primitive strongly regular graph are automorphisms or colorings. This confirms and strengthens a conjecture of Peter Cameron and Priscila Kazanidis that all strongly regular graphs are cores or have complete cores. The proof of the result is elementary, mainly relying on linear algebraic techniques.



For the Fall 2016 DM seminar schedule, see:

<http://www.people.vcu.edu/~clarson/discrete-seminar-fall-2016.html>