



CLAREMONT CENTER
for MATHEMATICAL SCIENCES

CCMS COLLOQUIUM

SIMULTANEOUS UNITARY SIMILARITY AND CONGRUENCE

by

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Abstract: Square complex matrices A and B are *unitarily similar* if there is a unitary matrix U such that $A = UBU^*$ (conjugate transpose); they are *unitarily congruent* if there is a unitary U such that $A = UBU^T$.

It is not difficult to determine whether a given pair of matrices is unitarily similar. In fact, one can do so with finitely many ordinary arithmetic operations.

However, the situation seems to be quite different for unitary congruence. The best known result says that two given matrices are unitarily congruent if and only if three specific pairs of matrices are simultaneously unitarily similar (that is, the same U works for all three pairs).

So...how can we determine whether finitely many pairs of matrices are simultaneously unitarily similar? What about simultaneous unitary congruence of finitely many pairs of matrices?

Wednesday, October 23, 2013, at 4:15pm

Davidson Lecture Hall, Claremont McKenna College

Refreshments at 3:45 p.m. in CMC's Math Commons Room (Adams Hall 209) & wine and cheese after the talk in Math Commons Room (Adams Hall 209)

*The dinner will be hosted by Prof. Stephan Garcia.
Please contact Prof. Garcia if you are interested in attending the dinner*