Pure Mathematics Seminar

Realizing hypergroups as association schemes

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Before we had groups, we had permutations groups. A permutation group consists of a set X together with another set Σ, consisting of permutations of X, and closed under multiplication and inversion. Forgetting about X makes Σ into an "abstract" group – a set of elements that can be pairwise multiplied, each pair yielding another element in the group. By Cayley's theorem, nothing is really lost, since any abstract group can be realized as a permutation group.

An association scheme is a set X along with another set S, consisting of binary relations on X, and satisfying some closure axioms. Forgetting about X makes S into an abstract hypergroup – a set of elements that can be pairwise multiplied, but with products no longer singly defined. Now, something is lost, since not every hypergroup can be realized as an association scheme.

It is natural now to seek a way to characterize those hypergroups which arise from association schemes. As a case study, we will consider noncommutative hypergroups of rank four.

Date: **Friday, January 22, 2016**
Time: **3:00 pm**
Place: **Edinburg:** MAGC 1.302, **Brownsville:** UBLB 2.206

The talk will delivered live at the *Edinburg* campus and will be streamed to the Brownsville campus

Coffee and cookies will be served.

For further information or for special accommodations, please contact Dr. Sergey Grigorian via email at [`sergey.grigorian@utrgv.edu`], or Dr. Alexey Garber at [`alexey.garber@utrgv.edu`], or visit the webpage [`http://blue.utb.edu/dg2012/puremathseminar.html`].