



*The Mathematical Association of America*

**The Math Club/MAA Student Chapter  
presents**

**Radio Labeling of  $C_n \square C_n$   
Aaron Yeager, CSULA student**

**Wednesday, October 18, 2006  
3 – 4 pm, Simpson Tower 213  
Refreshments 2:30 - 3**

Radio labeling is a variation of Hale's Channel assignment problem. We seek to assign positive integers to the vertices of a graph  $G$  subject to various distance constraints. Specifically, a radio labeling of a connected graph  $G$  is a function  $c: V(G) \rightarrow \mathbb{N}$  such that

$$d(u,v) + |c(u) - c(v)| \geq 1 + \text{diam}(G)$$

for every two distinct vertices  $u$  and  $v$  of  $G$ . The span of a radio labeling is the greatest integer assigned to a vertex. A radio number of a graph  $G$  is the minimum span, taken over all radio labelings of  $G$ . We establish the radio number of  $C_{2k} \square C_{2k}$  and share progress towards identifying the radio number of  $C_{2k+1} \square C_{2k+1}$ .

For more information, contact Mike "Quimby" Krebs at [mkrebs@calstatela.edu](mailto:mkrebs@calstatela.edu) or Tony Shaheen at [ashahee@calstatela.edu](mailto:ashahee@calstatela.edu).

Math Club website: [http://www.calstatela.edu/academic/math/Math\\_Club/mathClub.htm](http://www.calstatela.edu/academic/math/Math_Club/mathClub.htm)