**Meeting:** 1003, Atlanta, Georgia, SS 24A, AMS Special Session on Design Theory and Graph Theory, I

1003-05-1466 **Joshua D. Hughes*** (Joshua@math.net), Mathematics and Statistics Program, Louisiana Tech University, P.O. Box 3189, Ruston, LA 71272, and **Galen E. Turner III**. *Obstructions for cubic outerplanar graphs.* Preliminary report.

Kuratowski showed that the only cubic obstruction for planar graphs is $K_{3,3}$. In 1975, Glover and Huneke found the 6 cubic obstructions for the projective plane, and Archdeacon and Bonnington recently found that there are 21 cubic obstructions for the spindle surface. In the authors' attempt to determine the cubic obstructions for various classes of graphs, a complete list of cubic obstructions for the class of outerplanar graphs was required. In this context, it was insufficient to consider the class of simple cubic graphs as there are no simple cubic outerplanar graphs. Consequently, the operation for deletion of an edge in the cubic order required modification when dealing with multiple edges and loops. Thus, we consider the cubic obstructions for the class of outerplanar graphs where a graph is allowed to have loops and multiple edges. The authors present the 5 cubic obstructions for outerplanar graphs and several open questions related to other similar classes. (Received October 05, 2004)