

**Meeting:** 998, Houston, Texas, SS 11A, Special Session on Algebraic Topology

998-55-307            **David Blanc, Mark Johnson** and **James M Turner\*** (jturner@calvin.edu). *Realizing  
Diagrams of Homotopy Groups*. Preliminary report.

An obstruction theory is presented which determines the realizability of a diagram of homotopy groups (or, more generally, diagrams of  $\Pi$ -algebras) as a diagram of spaces (extending the recent work of Blanc, Dwyer, and Goerss on realizing a single  $\Pi$ -algebra). In particular, the cohomology groups of such diagrams are described, which serve as the residence for such obstructions. The example of a single map will be given to motivate a local-to-global perspective on calculating these cohomology groups. Finally, given time, we describe the moduli space of realizations and explore further a local-to-global approach to calculating its homotopy groups. (Received March 01, 2004)