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Matthew Thomas* (mthomas@math.arizona.edu) and **Guadalupe Lozano** (guada@math.arizona.edu). *Analyzing Conceptual Gains in Introductory Calculus with Interactively-Engaged Teaching Styles.*

Research in mathematics and physics education indicates that students in interactively engaged classrooms are more successful on tests of basic conceptual knowledge than students in traditional lecture-based classrooms. Despite this, undergraduate mathematics courses are dominated by lectures in which students take a passive role. While studies involving tools such as Peer Instruction and the Force Concept Inventory have encouraged changes in the ways introductory physics is taught, changes in mathematics instruction have not occurred to the same extent.

Using the recently developed Calculus Concept Inventory together with video and audiotape analysis of introductory Calculus classes, we investigate specific aspects of interactively-engaged teaching and determine which aspects of Interactively-Engaged teaching are most correlated with conceptual learning.

In this presentation, we will briefly describe the coding protocol that was developed for the 15 videos, using 5 instructors. We will also present results demonstrating the relationship between types of interactions occurring in the classroom and both conceptual and procedural learning, as measured by the Calculus Concept Inventory and course final exam. (Received September 24, 2012)