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Research in mathematics education indicates that students in interactively engaged classrooms are more successful on tests of basic conceptual knowledge. Despite this, undergraduate mathematics courses are largely dominated by lectures in which students take a passive role. To better understand the phenomenon of interactively engaged classrooms at the undergraduate level, 15 one-hour-long videos of first-semester calculus classrooms were recorded and coded using a modified version of a quality of mathematics instruction protocol. In this session, we will discuss the development of this protocol, wherein lessons were broken down into interaction episodes, with each episode quantified by aspects of the interaction such as who initiated the episode and the number of words spoken by students and the instructor. Preliminary findings will be discussed. Results of these analyses will be used to measure types and quality of classroom interactions in an undergraduate calculus course and explore possible correlations between teaching practices and development of student understanding of calculus concepts. (Received September 22, 2011)