1054-14-114   **Paolo Aluffi*** (`aluffi@math.fsu.edu`), Math Dept, Florida State University, Tallahassee, FL 32306. *Chern classes identities from weak coupling limits.*

This is joint work with Mboyo Esole (Harvard). We generalize a construction of Ashoke Sen of 'weak coupling limits' for certain types of elliptic fibrations. Physics arguments involving tadpole anomaly cancellations lead to conjectural identities of Euler characteristics. We generalize these identities to identities of Chern classes, which we are able to verify mathematically in several instances. For this purpose we propose a generalization of the so-called "Sethi-Vafa-Witten identity". We also obtain a classification of configurations of smooth branes satisfying the tadpole condition. (Received September 09, 2009)