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**Lawrence A. D'Antonio\*** (ldant@ramapo.edu), Ramapo College of New Jersey, Mahwah, NJ 07430. *Gauss and the Sums of Three Squares*. Preliminary report.

A common theme in 19th century number is counting the number of representations of a number as the sum of squares. In his *Disquisitiones Arithmeticae*, Gauss computes the number of primitive representations of an integer as a sum of three squares. In this talk we discuss how Gauss uses the methods of quadratic forms to solve this problem. We also briefly consider further developments of Gauss's method by Eisenstein, Hermite, and Minkowski. (Received August 17, 2009)