Athens-Atlanta Number Theory Seminar

Using mass formulas to enumerate definite quadratic forms of class number one

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Abstract: This talk will describe some recent results using exact mass formulas to determine all definite quadratic forms of small class number in at least 3 variables, particularly those of class number one.

The mass of a quadratic form connects the class number (i.e. number of classes in the genus) of a quadratic form with the volume of its adelic stabilizer, and is explicitly computable in terms of special values of zeta functions. Comparing this with known results about the sizes of automorphism groups, one can make precise statements about the growth of the class number, and in principle determine those quadratic forms of small class number.

We will describe some known results about masses and class numbers (over number fields), then present some new computational work over the rational numbers, and perhaps over some totally real number fields.

Tuesday, October 20, 2009, 4:15 pm
Mathematics and Science Center: W201

Mathematics and Computer Science
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