On the explicit determination of root numbers of abelian varieties

Maria Sabitova
CUNY Queens College

ABSTRACT: Root numbers occur as signs in conjectural functional equations for L-functions attached to elliptic curves and, more generally, to abelian varieties, which are higher-dimensional analogues of elliptic curves. Furthermore, the Birch and Swinnerton-Dyer conjecture links root numbers to ranks of abelian varieties. Thus, as an application, root numbers can be used to obtain information about ranks, the study of which constitutes one of the main themes in number theory. In this talk I will report on the progress made so far in finding various formulas for root numbers of abelian varieties.