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A Physicists Take on the Conjecture of Birch and Swinnerton-Dyer

It is interesting that some problems in number theory seem similar to problems familiar to physicists, though often these are cast in very different language. The BDS conjecture appears to be such a problem. The conjecture can be recast as the problem of estimating a "path integral" by means of a stationary phase approximation. The most surprising aspect of the analysis is that the paths of stationary phase correspond to the rational lines of the elliptic curve rather than directly to the rational points of the curve.