Computations on a conjecture of BSD type postulated by B. Mazur and J. Tate

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In a series of articles, Mazur and Tate postulated a p-adic analogue of the Birch and Swinnerton-Dyer conjecture for finite layers. This conjecture have similar invariants as the classical BSD conjecture, but it has a multiplicative form. Invariants like the Tamawaga numbers, the order of the torsion, the order of the Tate-Shafarevich group, appear as exponents of the arithmetic side of the conjectured equation. In the analytic side, we have Modular Symbols that play the role of the $\mathcal{L}$ function, and the equation holds over a finite abelian multiplicative group. We will present computational evidence in favor of the mentioned conjecture, and we will explain how it was computed.