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Title: The shuffle variant of Terai's conjecture on exponential Diophantine equations

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Let p, q and r be positive integers with $p, q, r \geq 2$, and let a, b and c be pair-wise relatively prime positive integers such that $a^p + b^q = c^r$. Terai's conjecture states that apart from a handful of exceptions, the exponential Diophantine equation $a^x + b^y = c^z$ in positive integers x, y and z, has the unique solution $(x, y, z) = (p, q, r)$. In this paper we consider a similar problem (which we call the shuffle variant of Terai's problem). Our problem states that apart from a handful of exceptions, the exponential Diophantine equation $c^x + b^y = a^z$ in positive integers x, y and z, has the unique solution $(x, y, z) = (1, 1, p)$ if $q = r = 2$ and $c = b + 1$, and no solutions otherwise. We establish several results on our problem by the theory of linear forms in two archimedean and non-archimedean logarithms with various elementary techniques. In particular we prove that the shuffle variant of Terai's problem is true if $q = r = 2$ and $c = b + 1$.

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