

# On arithmetical properties of $q$ -analogues of various constants

Yohei Tachiya

I will talk about the results on arithmetical properties for  $q$ -analogues of several constants involving  $q$ -harmonic series,  $q$ -analogue of  $\log 2$ , and  $q$ -analogue of  $\zeta(2)$ .

Furthermore, I introduce my recent work joint with K. Amano, which gives the quantitative irrationality results of the number  $\sum_{n=1}^{\infty} r^n / (q^n - r^l)$ , where  $q$  ( $|q| > 1$ ) is an integer,  $r$  ( $0 < |r| < |q|$ ) is a rational number, and  $l \geq 1$  is an integer.