# SYMMETRIC IDENTITIES FOR DEGENERATE $q$-POLY-GENOCCHI NUMBERS AND POLYNOMIALS

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**Abstract:** In the present article, we introduce a new class of degenerate $q$-poly-Genocchi polynomials and numbers including $q$-logarithm function. We derive some relations with this polynomials and the Stirling numbers of the second kind and investigate some symmetric identities using special functions that are involving these polynomials.

## 1. Introduction

Throughout this presentation, we use the following standard notions $\mathbb{N} = \{1, 2, \cdots\}$, $\mathbb{N}_0 = \{0, 1, 2, \cdots\} = \mathbb{N} \cup \{0\}$, $\mathbb{Z}^- = \{-1, -2, \cdots\}$. Also as usual $\mathbb{Z}$ denotes the set of integers, $\mathbb{R}$ denotes the set of real numbers and $\mathbb{C}$ denotes the set of complex numbers. For any $n \in \mathbb{N}$, the $q$-number can be defined as follows

$$[n]_q = \frac{1 - q^n}{1 - q}.$$