# Several differential equations for Genocchi polynomials combined with trigonometric functions 

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#### Abstract

In this paper, we find $q$-differential equations for polynomials that appear by combining trigonometric functions with Genocchi polynomials. Since Genocchi polynomials (QSG and QCG) come in two forms, we can identify interesting differential equations for the variables $x$ and $y$.


AMS Subject Classification (2020): 05A19, 11B83, 34A30
Keywords: $q$-derivative, $q$-SINE Genocchi (QSG) polynomials, $q$ COSINE Genocchi (QCG) polynomials, $q$-difference equation

