Emrah Kilic and Helmut Prodinger A Generalized Filbert Matrix, Fibonacci Quart. 48 (2010), no. 1, 29–33.

Abstract

A generalized Filbert matrix is introduced, sharing properties of the Hilbert matrix and Fibonacci numbers. Explicit formulae are derived for the LU-decomposition, their inverses, and the Cholesky factorization. The approach is to use q-analysis and to leave the justification of the necessary identities to the q-version of Zeilberger's celebrated algorithm.