



ISSN: 1889-3066

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Web site: [jja.ujen.es](http://jja.ujen.es)

Jaen J. Approx. 6(1) (2014), 117–142

**Jaen Journal**

**on Approximation**

# Approximation by Baskakov quasi-interpolants

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## Abstract

Baskakov operators and their inverses can be expressed as linear differential operators on polynomials. Recurrence relations are given for the computation of their coefficients. They allow the construction of the associated Baskakov quasi-interpolants (abbr. QIs). Then asymptotic results are provided for the determination of the convergence orders of these new quasi-interpolants. Finally some results on the computation of these QIs and the numerical approximation of functions defined on the positive real half-line are illustrated by some numerical examples.

**Keywords:** Baskakov quasi-interpolation, approximation by rational series.

**MSC:** Primary 41A35; Secondary 41A20.

## §1. Introduction

In the present paper, the general method developed by various authors for the construction of quasi-interpolants (abbr. QIs) of Bernstein and other types, is applied to Baskakov operators [2] defined by

$$\mathcal{V}_n f(x) := \sum_{k \geq 0} f_k v_{k,n}(x), \quad f_k := f\left(\frac{k}{n}\right),$$

**Communicated by**

K. Jetter

**Received**

October 21, 2013

**Accepted**

January 3, 2014