

*Software for computing with B-series*

David Ketcheson

(King Abdullah University of Science and Technology)

Hendrik Ranocha

We present BSeries.jl, a Julia package for the computation and manipulation of B-series, which are a versatile theoretical tool for understanding and designing discretizations of differential equations. We give a short introduction to the theory of B-series and associated concepts and provide examples of their use, including method composition and backward error analysis. The associated software is highly performant and makes it possible to work with B-series of high order.