A new integrable convergence acceleration algorithm for computing the sequence transformation via pfaffians

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An extended transformation of high order is presented in terms of pfaffians and a new convergence acceleration algorithm for implementing the transformation is constructed. Then the Lax pair of the recursive algorithm is obtained which implies that the algorithm is integrable. Numerical examples with applications of the algorithm are also presented. This is joint work with Li Shihao, He Yi and Chang Xiangke.