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Xinyu Sun* (solaroflare@hotmail.com), 3550 Grandlake Blvd, #D205, Kenner, LA 70065. *A New Algorithm on Hypergeometric Summations and Recursions on Wigner's $6j$ -Symbols*. Preliminary report.

A new fast algorithm is developed to find recursions on sums of proper hypergeometric terms, which is based on Zeilberger's creative telescoping, but implements a method other than Gosper's algorithm. Using the algorithm, we find a sharp upper bound for the order of recursions. At the end, we show that when all the symbols in $6j$ -symbols problems are constant multiples of n , the resulting function always satisfy a recursion over n of order 2, regardless of the constants. (Received September 14, 2012)