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Hypergeometric Creative Telescoping

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In this talk, we adapt the theory of normal and special polynomials from symbolic integration to the summation setting, and then built up a general framework embracing both the shift and the q -shift cases. In the context of this general framework, we are able to unify the methods of creative telescoping for hypergeometric terms and q -hypergeometric terms using reductions. These two cases will be split up only when it is really necessary. This way instantly reveals the intrinsic difference between the shift and the q -shift cases, and hopefully, provides us more insights about the more general cases. This is joint work with Hao Du, Hui Huang and Ziming Li.

Keywords

Creative Telescoping, q -Hypergeometric Term, Reduction, Symbolic Summation