

# Studies of hypergeometric functions using $D$ -modules

by

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In this talk, we develop a  $D$ -module approach to solutions to linear differential equations by long divisions of different differential operators. In particular, this explains Weyl algebraic origin of the series solutions of hypergeometric equations, and can also be applied to difference analogue of hypergeometric functions. The approach to  $q$ -analogue and/or Bessel functions may also be discussed.