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**Lance Nielsen\*** ([lnielsen@creighton.edu](mailto:lnielsen@creighton.edu)), Department of Mathematics, Creighton University, 2500 California Plaza, Omaha, NE 68178. *Feynman's Operational Calculi: Using Cauchy's Integral Formula.*

We will express the disentangling (in the sense of Feynman's operational calculus) of a function of several non-commuting operators using Cauchy's Integral Formula in several complex variables. It will be seen that the disentangling of a given function  $f$  can be expressed as a contour integral around the boundary of a polydisk where the standard Cauchy kernel is replaced by the disentangled version of the Cauchy kernel expressed as an element of the disentangling algebra. This approach to Feynman's operational calculus allows for us to develop a "differential calculus" with disentanglings. (Received September 20, 2011)