Solving Schrodinger Equation in Mixed Representation MALLIKA
DHAR, CHARLES WERNETH, The University of Southern Mississippi,
CHRISTOPHER SIROLA, KHIN MAUNG, The University of Southern Missis-
sippi, USM COLLABORATION — Solving the Schrodinger equation with relativis-
tic kinematics is easier in momentum space since the momentum operators under
the radical sign simply become numbers. But power law potentials become singular
in momentum space and subtraction procedures become necessary. By using the
coordinate representation for the potential part and momentum representation for
the kinetic energy part, one can solve these problems, but the resulting equation
has an oscillating integral with a spherical Bessel function. We expand the wave
function in a complete set of basis functions which has an exact Fourier transform
and study the convergence of the solution by using different integration methods.

Khin Maung
The University of Southern Mississippi