

# A HIERARCHY OF STURM-LIOUVILLE PROBLEMS

PAUL BINDING

binding@math.ucalgary.ca

The Department of Mathematics and Statistics

University of Calgary

2500 University Drive, Calgary, Alberta, Canada, T2N 1N4

S Sturm-Liouville problems are studied subject to a class of eigenvalue dependent boundary conditions, involving rational functions obeying certain sign conditions. This class turns out to be stratified, with explicit transformations connecting problems subject to boundary conditions from adjacent strata. These transformations enable certain (e.g., asymptotic or inverse) questions to be answered via known results for the standard (constant boundary condition) case.