

# ON A FUNCTIONAL FOR SOLVING INVERSE STURM-LIOUVILLE PROBLEMS

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We discuss a functional whose unique global minimum solves the inverse Sturm-Liouville problem on a bounded interval. It is based on a functional of Brown, Knowles, and Samko, using boundary value solutions instead of initial value solutions. Its advantage is the simpler structure of its derivative, which makes it more suitable for proving important properties.

Since for solving actual inverse problems, the functional has to be minimized with a numerical algorithm, we would like to prove that there is no stationary point except for the global minimum. This is not known for most functionals used for this type of computations. We will present some first results in this direction.