

## The variational spline method for solving Troesch's problem

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Troesch's problem arises in the investigation of the confinement of a plasma column by radiation pressure. Recently, this problem has been studied extensively.

We present a variational approximation method for solving Troesch's problem. The existence and the uniqueness of this problem are shown. Moreover, we construct a sequence of solutions of the problem from the number of knots in the partition of the domain. Such sequence convergence to the exact solution of the problem. Finally, we analyze some numerical and graphical examples in order to show the efficiency of our method.

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