1036-83-189 **Shabnam Beheshti*** (beheshti@math.umass.edu), Department of Mathematics, University of Massachusetts, Amherst, MA 01003-9305. *Soliton Content of Generalised Two-Dimensional Gravitation.* Preliminary report.

A majour goal of theoretical physics is to devise a consistent theory of quantum gravity. A way in which the complexity of the resulting field equations is addressed is by dimensional reductions. One such model is Jackiw-Teitelboim (JT) Theory of two dimensions, which admits classical Schwarzschild-type black hole metric solutions; these solutions exhibit some of the usual thermodynamic properties of their higher dimensional counterparts.

Nonetheless, serious obstacles exist when studying the reduced nonlinear PDE systems. We introduce a potential in the JT action and characterise the generalised field equations in terms of a particular scalar field called the dilaton. It is known dilatons play an important role in the geometry of black holes. By choosing an appropriate potential, we produce new solutions to the JT field equations using soliton solutions of the elliptic sine-Gordon equation. An explicit correspondence between a class of nonconstant curvature metrics and Schwarzschild-type metrics is also established in three gravitational models: JT Theory, String Inspired Gravity, and Spherically Symmetric Gravity.

The results suggest a direction for using KdV, Liouville, and several other classical equations to study the soliton content of the dilaton theory. (Received January 22, 2008)