EXOTIC COMPACT OBJECTS IN 2+1 DIMENSIONS

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This talk is focused on a simple configuration involving a static and circularly symmetric scalar field with vanishing potential in 2+1 dimensions. The only nontrivial aspect is that we allow for a non-canonical kinetic term (like in K-essence fields). Manipulating the equations, we will see that there is a special family of Lagrangian functions that allow us to simplify the equations and obtain analytical solutions. Despite the use of this "simplicity argument", we will see that some of the resulting configurations are non-trivial, yielding regular space-times that are neither black holes nor wormholes, and possessing interesting new properties. I will comment on the potential implications of these solutions for the search of new exotic compact objects in 3+1 dimensions.