

SPHERICALLY SYMMETRIC, STEADY STATES OF NEWTONIAN SELF-GRAVITATING ELASTIC MATTER

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In this talk I will introduce a new definition of spherically symmetric elastic body in Newtonian gravity. Using this new definition it is possible to introduce Milne-type homology invariant variables which transform the field equations into an autonomous system of nonlinear differential equations. By employing dynamical systems methods I will finally discuss the existence of static balls for a wide variety of constitutive equations, including Seth, Signorini, Saint Venant-Kirchhoff, Hadamard, and John's harmonic materials.