

We discuss common themes arising in solving two non-linear partial differential equation systems, one coming from geometry, and the other from general relativity. In particular, we discuss the perturbation problem of finding small Hamiltonian stationary tori in Kahler manifolds (addressed recently in joint work with Adrian Butscher, and independent by Joyce-Lee-Schoen), which proceeds in the spirit of Rugang Ye's construction of small constant mean curvature spheres in Riemannian manifolds. As time permits, we present a gluing construction (joint work with Piotr Chrusciel and James Isenberg) of initial data for Einstein's theory of relativity which could model an N-body gravitational system. In each case the presence of approximate symmetries requires one to augment the PDE analysis with geometry or physics .