

Abstract Submitted
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Bifurcations of the Continuous Spectrum in the Vlasov-Poisson Equation¹ G.I. HAGSTROM, P.J. MORRISON, Physics Department and IFS, The University of Texas at Austin — In general, Hamiltonian systems such as ideal MHD possess two kinds of bifurcations (transitions) to instability: those that occur when stable modes collide at zero frequency and those that occur when the collision is at nonzero frequency. A theorem about finite-dimensional Hamiltonian systems due to Krein and Moser states the the latter bifurcation can only occur if one of the colliding modes has positive energy and the other has negative energy. For infinite-dimensional systems the situation is complicated because of the possible existence of a continuous component to the spectrum. Extensions of the Krein-Moser theorem that include the continuous spectrum will be discussed and applied to the Vlasov-Poisson system.

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