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Absence of certain exchange driven instabilities of an electron gas at high densities GABRIELE F. GIULIANI, Department of Physics, Purdue University, GIOVANNI VIGNALE, Department of Physics and Astronomy, University of Missouri — In the high density limit the exchange energy easily overcomes the correlation energy in both two and three dimensional electron liquids. It is therefore reasonable to inquire if the class of exchange driven instabilities first discussed by Overhauser within the Hartree-Fock theory, could be of relevance in this limit. Our analysis shows that this is not the case.

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