



AALBORG UNIVERSITY
DENMARK

Aalborg Universitet

Generalized susceptibilities for a perfect quantum gas

Cornean, Decebal Horia; Briet, P.; Louis, D.

Published in:

Markov Processes and Related Fields

Publication date:

2005

Document Version

Publisher's PDF, also known as Version of record

[Link to publication from Aalborg University](#)

Citation for published version (APA):

Cornean, H. D., Briet, P., & Louis, D. (2005). Generalized susceptibilities for a perfect quantum gas. *Markov Processes and Related Fields*, 11, 177-188.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- ? Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- ? You may not further distribute the material or use it for any profit-making activity or commercial gain
- ? You may freely distribute the URL identifying the publication in the public portal ?

Take down policy

If you believe that this document breaches copyright please contact us at vbn@aub.aau.dk providing details, and we will remove access to the work immediately and investigate your claim.

Generalized susceptibilities for a perfect quantum gas

Abstract: The system we consider here is a charged fermions gas in the effective mass approximation, and in grand-canonical conditions. We assume that the particles are confined in a three dimensional cubic box Λ with side $L \geq 1$, and subjected to a constant magnetic field of intensity $B \geq 0$. Define the grand canonical generalized susceptibilities χ_L^N , $N \geq 1$, as successive partial derivatives with respect to B of the grand canonical pressure P_L . Denote by P_∞ the thermodynamic limit of P_L . Our main result is that χ_L^N admit as thermodynamic limit the corresponding partial derivatives with respect to B of P_∞ . In this paper we only give the main steps of the proofs, technical details will be given elsewhere.