

**MULTIMARGINAL OPTIMAL TRANSPORTATION  
PROBLEMS WITH COULOMB COST AND  
APPLICATIONS**

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I will describe how a the multimarginal optimal transportation problem with Coulomb cost appears in connection with the so called Density Functional Theory. I will then introduce a variational approximation of the problem and I will show how to obtain, from this approximation, a duality result and some qualitative properties of the minimizers.

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