



Universidade do Minho



3. Curricular Unit

Advanced Physics Topics 1

Module

Correlations Effects in Low-Dimensional Materials and Systems (CELDM)

Type

Lecture course

Contact hours

18

Professor/Researcher in charge

José Carmelo, U. Minho

Summary of Contents

Why are the effects of many-body interactions more important in lower dimensions?

The Fermi liquid versus non-perturbative low-dimensional electronic problems.

The Luttinger liquid and beyond it.

Solvable 1D electronic models.

Different properties of integrable and non-integrable 1D quantum problems.

Evaluation

Written report with oral defense

Jury

José Carmelo, João Lopes dos Santos, Antonio Luís Ferreira