

Material for Week 11

Physics 4488/6562: Statistical Mechanics

<http://www.physics.cornell.edu/sethna/teaching/562/>

Exercises due Wed. Apr 28

Last correction at January 13, 2021, 1:01 pm

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This chapter is more formal and theoretical. The pre-class exercises are more challenging than normal – you may wish to use Mathematica for some of the integrals, although all can be done by hand using contour integration.

This homework due one week from Wednesday in honor of April break. Have a good rest.

Monday

In-class question: [10.13](#) *Onsager regression hypothesis*

Wednesday

Read: Chapter 10, Sec. 10.5 (Susceptibility and linear response) and 10.6 (Dissipation and the imaginary part)

Pre-class question: [10.14](#) *Liquid dynamics*

In-class question: [10.15](#) *Harmonic susceptibility, dissipation*

Monday

Read: Chapter 10, Secs. 10.7 (Static susceptibility), 10.8 (The fluctuation-dissipation theorem), and 10.9 (Causality and Kramers-Krönig)

Pre-class question: [10.18](#) *Harmonic Kramers-Krönig*

Exercises for everyone (4488 and 6562)

[10.17](#) *Susceptibilities and correlations.*

[10.5](#) *Telegraph noise in nanojunctions.*

Exercises for Graduate Course (6562 only)

[10.9](#) *Quasiparticle poles and Goldstone's theorem.*

[10.8](#) *Magnet dynamics.*