Vybrané kapitoly zo štatistickej fyziky
Príklady z cvičenia

Príklad 1 (Exercise 7.4)**.** Compute the dynamic susceptibility for a Brownian particle of mass m in the presence of white noise $\xi(t)$ and fluid friction γ.

Príklad 2 (Exercise 7.5)**.** Verify the Kramers–Kronig relations for the dynamic susceptibility in Exercise 7.4.

Príklad 3 (Exercise 7.6)**.** Given the dynamic susceptibility $\chi(\omega) = (-im\omega + \gamma)^{-1}$ for simple Brownian motion (see Exercise 7.4) and the thermal average $\langle v^2 \rangle_T = kBT/m$, use the fluctuation–dissipation theorem to obtain the velocity autocorrelation function.

Príklad 4 (Exercise 7.7)**.** Prove that $\bar{\xi}(0) = \bar{g}^{-1}/T$, where $\bar{g}$ is the matrix whose matrix element is $g_{ij} = (\partial^2 S/\partial\alpha_i\partial\alpha_j)_U$.