

**Problem 2.37**

Recognizing two facts:

1.  $R_g(\tau) = |G(f)|^2$ , and
  2. the spectrum  $G(f)$  is invariant to a time shift,
- we infer that a signal  $g(t)$  and the time-shifted version  $g(t - t_0)$  for any  $t_0$  will have exactly the same autocorrelation function.