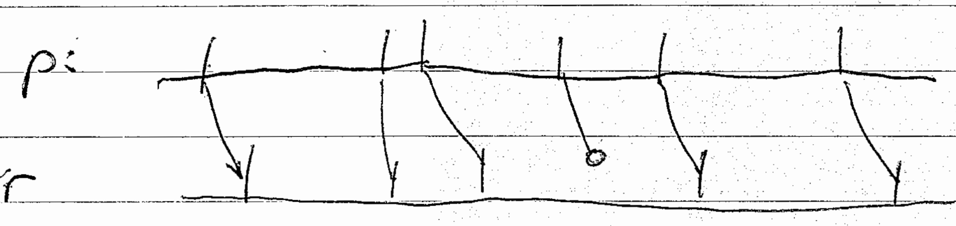
Power Spectra HW 2. (15-27)

1. Consider a "cascade" process in which events of a renewal process defined by renewal density $p(t)$ give rise to a second stochastic process $r(t)$



in which ~~an~~ p-event lead to at most one r-event, at relative time determined by $r(t)$

$$\int_0^\infty r(t)\,dt \le 1. \qquad (<1 \text{ indicate failures})$$

Find the spectrum of r.

2. Alternating process: A process consists of an event at time determined by $p_1(t)$, then an event " " " " $p_2(t)$, then $p_1(t)$, etc.

Find the spectrum.

3. What is the power spectrum, & what are the correl coeff's of a maxent process with $\langle y_n^2 \rangle = 1$, $\langle y_n y_{n-1} \rangle = \rho$?