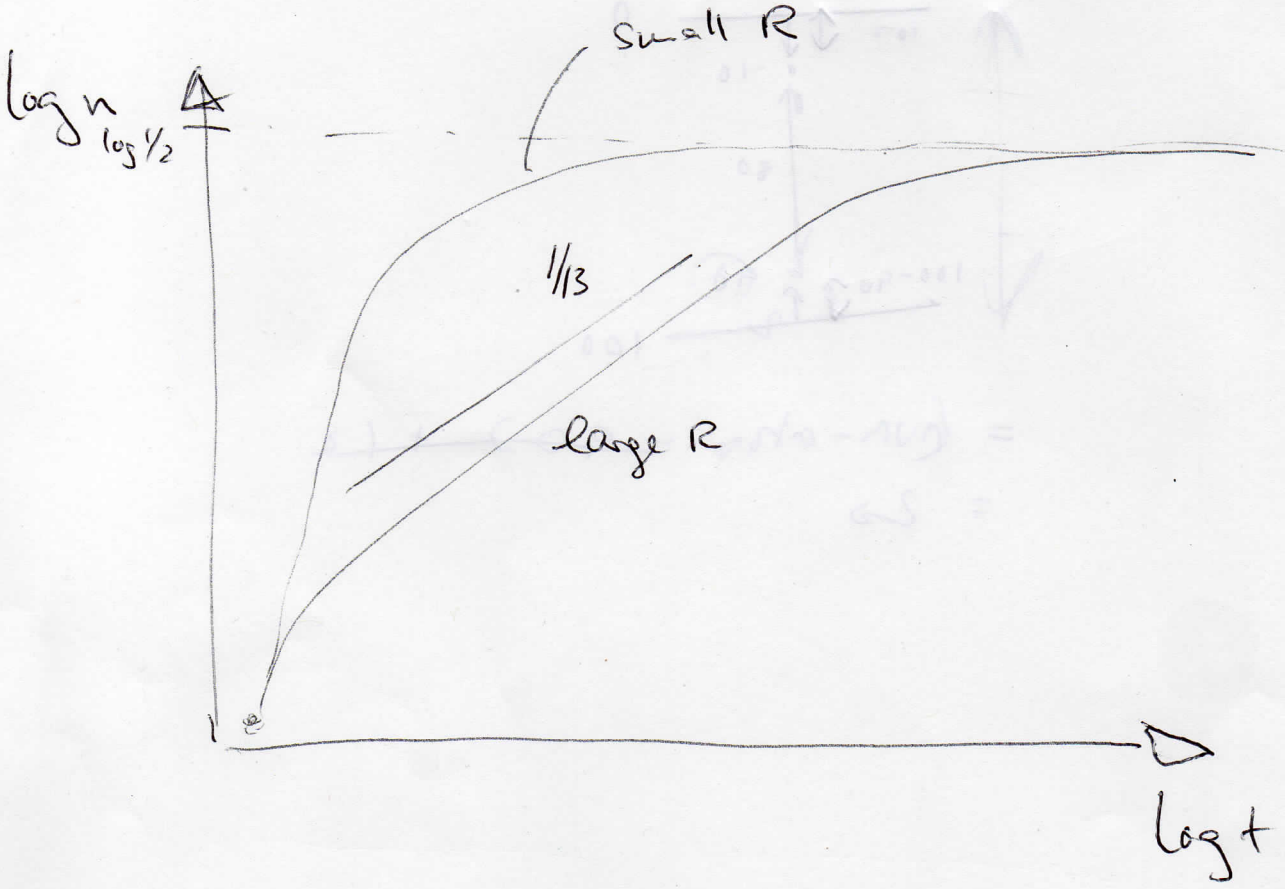
$n(t)$ .. density of excitations of $\uparrow$



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fluctuation: $\Delta n = \sqrt{\langle n(t)^2 \rangle - \langle n(t) \rangle^2}$

Spatial correlations

$$g_{nm}(t) = \langle n_n(t)\, n_m(t) \rangle - \langle n_n(t) \rangle \langle n_m(t) \rangle$$

periodic boundaries

↳ $$g_x(t) = \langle n_1(t)\, n_{1+x}(t) \rangle - \langle n \rangle^2$$