$$\int_{t=0}^{1/2}\int_{h=x+\frac{1}{2}t^2\lambda}^{\infty} \cancel{\int_{0}^{1/2}} \; \underbrace{p(h,t)}_{} \, dh \, dt$$

h,t independent

so $p(h,t) = p(h)p(t)$

$$= \int_{t=0}^{1/2} \underbrace{\mathbb{P}\left(h > x + \tfrac{1}{2}t^2\lambda\right)}_{} dt$$

have EC approx to this.

$$\approx \int_{t=0}^{1/2} \sum_{d=0}^{D} \mathcal{L}_d \cancel{(s)} \, \underbrace{\rho_d\left(x+\tfrac{1}{2}t^2\lambda\right)}_{} \, dt$$

these are known f^n's in t so can integrate them!

$$\approx \sum_{d=0}^{D} \cancel{\mathcal{L}_d(s)} \, \mathcal{L}_d \int_{t=0}^{1/2} \rho_d\left(x+\tfrac{1}{2}t^2\lambda\right) dt$$

Need to add bounds on how good this approx is. and results on how things improve at lat size $\to 0$, and/or smoothness <u>increases</u>.