

$$\mathbb{E} \left[\mathbb{E} \left[|\det \nabla^2 f(t)| \mathbb{I}[f(t) > u] \right] \right]$$

$$f(t) \mid \nabla^2 f(t) = \square$$

$$f(t) \mid \nabla^2 f(t) \quad \nabla^2 f(t) \sim N(0, \mathbb{A})$$

$$\int_T \mathbb{E} \left[|\det \nabla^2 f(t)| \mathbb{I}[\nabla^2 f(t) \in D] \right] p_t(u) dt$$

$$y = A K^{1/2} \nabla^2 f(t) \quad \text{then } \nabla^2 f(t) \sim N(0, A)$$

$$\nabla^2 f(t) = A K^{1/2} A^{1/2} y$$

