Expand the arguments of K in (4.26).

$$K(x_b, t_b, x_a, t_a) = \int_{-\infty}^{\infty} K(x_b, t_b, x_c, t_c) K(x_c, t_c, x_a, t_a)\, dx_c$$

Substitute $t_a = t_c - \epsilon$.

$$K(x_b, t_b, x_a, t_a) = \int_{-\infty}^{\infty} K(x_b, t_b, x_c, t_c) K(x_c, t_c, x_a, t_c - \epsilon)\, dx_c$$

Consider the following Taylor series expansion of $K(x_c, t_a + \epsilon, x_a, t_a)$.

$$K(x_c, t_a + \epsilon, x_a, t_a) \approx K(x_c, t_a, x_a, t_a) + \epsilon \frac{\partial}{\partial t_a} K(x_c, t_a, x_a, t_a)$$

$$\lim_{\epsilon \to 0} \int_{-\infty}^{\infty} K(x_b, t_b, x_c, t_c) K(x_c, t_c, x_a, t_c - \epsilon)\, dx_c = \int_{-\infty}^{\infty} K(x_b, t_b, x_c, t_c)\, dx_c$$

FIXME