$$= 1 - e^{-\varepsilon/2s} = o(\sqrt{\varepsilon})$$

d'où $\lim_n E K_t^2(n) = 0$ et $K_t(n) \to 0$ ps

Enfin :

$$E\left(W_t^{(i)} - I_t^{i}(\varepsilon)\right)^2 = E \int_0^t 1(R_s^2 < \varepsilon) \left[\frac{1}{R_s} - \frac{1}{2\sqrt{\varepsilon}}\left(3 - \frac{r_s}{\varepsilon}\right)\right]^2 (W_s^i)^2 ds$$

$$\underset{///}{W_t^{(i)}} = \int_0^t \frac{W_s^i}{R_s} dW_s^i$$

$$= E \int_0^t 1(R_s^2 < \varepsilon) \left[1 - \frac{1}{2}\sqrt{\frac{R_s^2}{\varepsilon}}\left(3 - \frac{R_s^2}{\varepsilon}\right)\right]^2 \times \left(\frac{W_s^i}{R_s}\right)^2 ds$$

$$\leq \int_0^t P(R_s^2 < \varepsilon) ds = o(\sqrt{\varepsilon})$$