$$\|g(t_{mk}) - g(t^{\alpha})\| \leq \omega_{\varepsilon}(\sqrt{N}\,\mathrm{diam}(B_{mj}))$$

because that's the length of the diagonal!

$$\Downarrow$$

$$\mathbb{P}(A_{mj} \cap E_{\varepsilon}) \leq$$

$$\mathbb{P}\left(\cancel{\|g(t_{mk}) - g(t^{\alpha})} \; g(t_{mk}) \in \partial B + \omega_{\varepsilon}(\sqrt{N}\,\mathrm{diam}(B_{mj}))\,\mathrm{ball}\right)$$

$$|\longleftrightarrow)$$

this prob can be set to 0 certainly

since $\mu(\partial B + \varepsilon\,\mathrm{ball}) \to 0$

and $\omega_{\varepsilon}(\sqrt{N}\,\mathrm{diam}(B_{mj})) \leq \delta^{\varepsilon}_{m}$

$\omega_{\varepsilon}(\sqrt{N}\,\delta_m^{1/n+1}) \pm$