Assume $\mu(\partial B + \varepsilon \,\text{Ball landing}) \le K\varepsilon^{n+1}$

$\to 0$

some constant K and all $\varepsilon > 0$

then

$d(t_{mj}, \partial B) \le \sqrt{n}\, C_\varepsilon \,\mathrm{diam}(B_{mj})$

$h(t_{mj})$

$\le \sqrt{n}\, C_\varepsilon\, \cancel{\delta^{1/(n+1)}}\, \mathrm{diam}(B_{mj})$

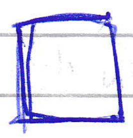
$\Rightarrow \mathbb{P}(A_{mj} \cap E_\varepsilon)$

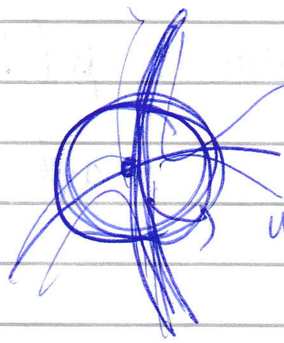
$\le \int p_Z \mathbb{1}[Z \in \partial B + \sqrt{n}\, C_\varepsilon\, \delta_m^{1/(n+1)}\,\text{ball}]$

$\le M \mu[\partial B + \sqrt{n}\, C_\varepsilon\, \delta_m^{1/(n+1)}\,\text{ball}]$

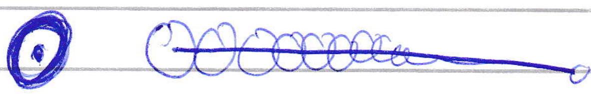
$\cancel{\to 0 \text{ as } n \to \infty}$

$\propto M\, \mathrm{diam}(B_{mj})^{n+1}$





union of these



could consider a countable subset