

Let \mathbb{R}^∞ be the subset of \mathbb{R}^ω consisting of all elements that are eventually 0. What is the closure of \mathbb{R}^∞ in \mathbb{R}^ω in the uniform topology. Justify Your answer.

$$X \in \mathbb{R}^\omega \text{ s.t. } X_n \rightarrow 0$$