

Info

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$$Y^X$$

Definition. Uniform metric on Y^X

Let X be a set and (Y, d_Y) be a metric space. Then the uniform metric on Y^X is

$$d_u(f, g) := \sup_{x \in X} \frac{d_Y(f(x), g(x))}{1 + d(f(x), g(x))}$$

This metric generates the uniform topology $\mathfrak{T}_{\text{uniform}}$ on X^Y .

Then there are three topologies on

$$\mathfrak{T}_{\text{product}} = \mathfrak{T}_{\text{pointwise}} \subset \mathfrak{T}_{\text{uniform}} \subset \mathfrak{T}_{\text{box}}$$

Proposition: If (Y, d) is complete, then

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is a complete metric on Y^X .

Current note has 0 direct children and 0 total descendants.

- [structures based on sets](#)
 - [Metric spaces](#)
 - Y^X

And it has 11 siblings.

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