Funktionalanalysis Notizen

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I. BAIRE SPACES

Definition 1 (Baire Spaces)**.** ...

Theorem 2 (Baire I)**.** ...

Theorem 3 (Baire II)**.** ...

II. TOPOLOGICAL VECTOR SPACES

Definition 4. A topological vector space is a vector space with a topology such that addition and scalar multiplication are continuous.

Theorem 5. Translation $T_v : x \mapsto x + v$ and multiplication $\lambda : x \mapsto \lambda x$ with $\lambda \neq 0$ are continuous.

Proof. They are invertible with inverse T_{-v} and $\frac{1}{\lambda}$ respectively □

Definition 6 (Uniform Continuity)**.**

Theorem 7 (Equivalence of Completeness Conditions)**.**

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Definition 8. content...

III. BANACH SPACES