Universität Bonn, Mathematisches Institut, PD Dr. Pavel Zorin-Kranich.
WiSe 2020/21, S2B1: HS Funktionalanalysis. Geometrische und konvexe Analysis.

Vortragsthemen

1. Brunn–Minkowski-Ungleichung (äquivalente Formulierungen, Beweis für konvexe Mengen, Gleichheitsbedingung) [Sch14, Section 7.1]
2. Prékopa–Leindler-Ungleichung [Sch14, Section 7.1]
3. Isoperimetrische Ungleichung, Sobolevungleichung [Gar02, Section 5], siehe auch [Gar].
4. Minkowski-Problem (Cherakterisierung der Oberflächenmaße konvexer Körper) [Sch14, Section 8.2.1]
5. Wulff–Konstruktion [Tay78, Theorem 1.1]
6. Variationszugang zum Minkowski–Problem [Sch14, Ende von Section 8.2.1].
7. Entropie [SW49, Theorems 2 and 9]
8. Shannon–Stam-Ungleichung [Bla65]
9. Young-Faltungsungleichung und die umgekehrte Ungleichung [Bar98]
10. Prékopa–Leindler-Ungleichung als Grenzwert der umgekehrten Young-Ungleichung, [Gar, Kapitel 14].

    Shannon–Stam-Umgleichung als Grenzwert der Young-Ungleichung, [Gar02, Section 14].
11. Monotonie der Entropie [Art+04]
12. Khinchin-Ungleichung für Polynome [Bou91]
13. Umgekehrte Santaló-Ungleichung [GPV14]
14. Umgekehrte Brunn–Minkowski-Ungleichung [GPV14]

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