

HARMONIC ANALYSIS I

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RITVA HURRI-SYRJÄNEN

1. Introduction
2. Hardy-Littlewood maximal function
and its elementary properties
3. Definitions of strong type (p, q) and weak type (p, q)
4. Covering lemmata
5. Hardy-Littlewood maximal inequalities
6. Lebesgue Differentiation Theorem
7. Interpolation
8. Some generalizations of the maximal operator
9. Whitney Decomposition
10. Calderón-Zygmund Decomposition of \mathbb{R}^n
11. Calderón-Zygmund Decomposition for functions
12. The Zygmund space $L \log L$
13. The C. Fefferman–E. M. Stein inequality
14. BMO
15. The John-Nirenberg inequality
16. The Fefferman-Stein equivalence $\|Mf\|_{L^p} \approx \|M^\# f\|_{L^p}$

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