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Lecture "Fourier Analysis" (summer term 2003)

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V. The Fourier transform

1. Motivation and basic idea
2. L^p-spaces of functions with infinite domains
3. The convolution: "multiplicative" operation with $L^1(-\infty, \infty)$-functions
4. The Fourier transform and its inverse
    A) Definition
    B) Properties of the Fourier transform
    C) Examples
5. The Fourier inversion theorem
6. The Riemann-Lebesgue theorem

VI. A list of important topics not treated within this course