

Mean periodic continuations of solutions of convolution equations

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Abstract

The theory of mean periodic functions is a subject which goes back to works of J. Littlewood, J. Delsarte, F. John and that has undergone a vigorous development in recent years. There has been much progress in a number of problems concerning local aspects of spectral analysis and spectral synthesis on homogeneous spaces. As one can see from the papers by P.Kuchment, L. Zalcman, V.V. Volchkov, Vit.V. Volchkov, the study of these problems is closely related to a variety of questions in harmonic analysis, complex analysis, partial differential equations, integral geometry, approximation theory, and other branches of mathematics. A good introduction to the subject is a recent book by V.V. Volchkov and Vit.V. Volchkov entitled "Harmonic Analysis of Mean Periodic Functions on Symmetric Spaces and the Heisenberg Group".

In my presentation I am going to focus on the problem of mean periodic continuation. The possibility of continuation of solutions to homogeneous convolution equations on subsets of the real axis and, in the case of the existence of continuation, the properties (such as continuity, smoothness etc.) of these continuations are studied. Exact examples for some kinds of convolvers are introduced.

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