

**PSEUDODIFFERENTIAL OPERATORS WITH COMPLEX ARGUMENTS  
AND CAUCHY PROBLEM.**

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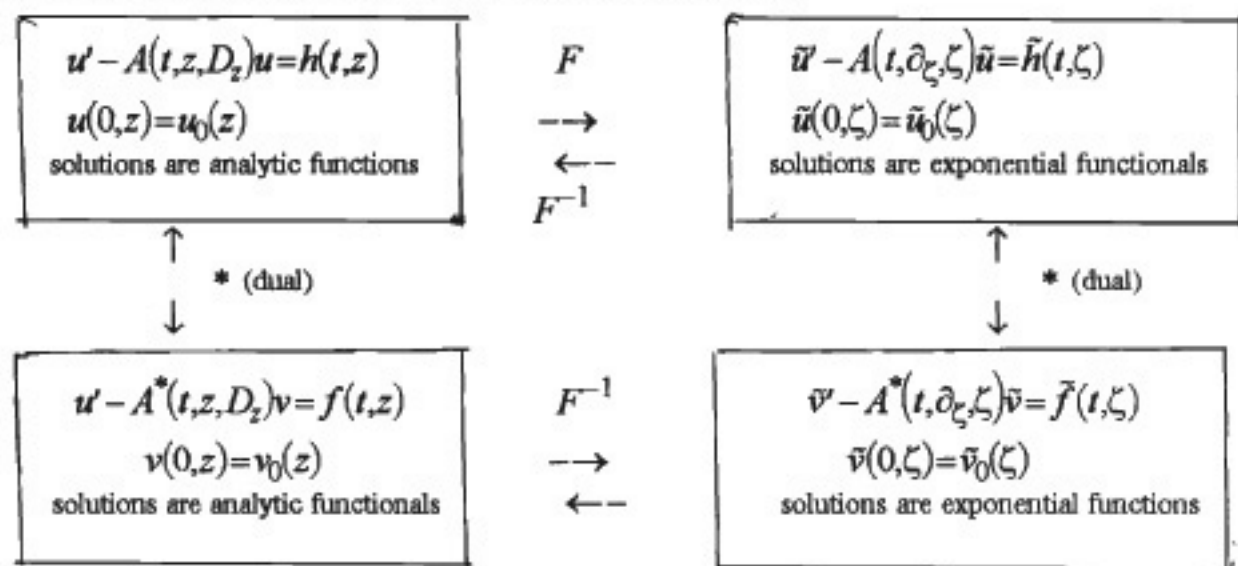
The lecture is devoted to the results concerning pseudodifferential operators with arbitrary analytic symbols and applications to the complex Cauchy problem:

1. The space  $Exp_{\Omega}(C_z^n)$  of exponential functions associated with the region  $\Omega \subset C_z^n$ , and PD-operator

$$A(D): Exp_{\Omega}(C_z^n) \rightarrow Exp_{\Omega}(C_z^n)$$

the symbol of which  $A(\zeta)$  is analytic in  $\Omega$ . Fourier transform  $F$  of arbitrary analytic functions.

2. Local analytic Cauchy problem, necessity of Kovalevskaja condition and Leray-Volevich conditions.
3. Global exponential Cauchy problem, criteria of correctness for the differential and PD-equations.
4. Connection between the analytic theory and exponential theory:



**Bibliography**

1. J. Dubinskii. Analytic pseudodifferential operators and their applications//Kluwer Acad. Publ., Dordrecht-Boston-London, 1991, 252 pp.