

PREFACE

Texture very strongly influences the macroscopic properties of materials (elasticity, magnetism, thermoconductivity etc.). Therefore modern high technology needs to take into account the development of textures. In geological science texture of rocks contains information on geological processes which took place a long period ago. Knowledge of the textures allows to draw conclusions about rock forming processes. The complete quantitative description of the texture is possible with orientation distribution function (ODF). Experimentally, one obtains only pole figures (PF). Using mathematical methods of pole figure inversion it is possible to calculate the ODF, which contains all physical information on the preferred orientation. These methods have only recently been developed and some problems are still under consideration nowadays.

The small but active quantitative texture community convened in the Frank Laboratory of Neutron Physics of the Joint Institute for Nuclear Research in Dubna, Russia from March 21–24, 1995, for the first workshop on **Mathematical Methods of Texture Analysis**, organized together with TU Clausthal and Research Centre Rossendorf, (Germany). The idea of such a meeting was expressed during ICOTOM 10 in September 1993 in Clausthal.

The purpose of the workshop was to bring together materials scientists and mathematicians working in the field of textures. The workshop dealt with questions concerning mathematical and numerical methods used in texture analysis, as well as in solid state physics of textured materials.

The workshop program can be summarized as follows: An overview of quantitative texture analysis was first presented. Fundamentals were then addressed of the latest ideas in this field. The next block was devoted to numerical questions of quantitative texture analysis. It is necessary to mention that many talks were devoted to the quantitative connection between texture and physical properties and processes.

Finally, the Workshop participants expressed a desire to have such meetings regularly, between ICOTOM conferences.

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