



Dear Colleagues!

Institute of Mathematics of the University of Georgia is pleased to invite you to the Online Tbilisi Analysis & PDE Seminar. The seminar is held bi-weekly on Tuesdays at 20 : 00 local time in Tbilisi.

Talk on May 16, 2023

Speaker: Prof. Davit Natroshvili, Georgian Technical University;
<https://scholar.google.com/citations?user=XZyv0NUAAAAJ&hl=en>

"An alternative potential method for mixed boundary value problems"

Abstract: We consider an alternative potential method to investigate a mixed boundary value problem (BVP) for the Lamé system of elasticity in the case of three-dimensional bounded domain, when the boundary surface is divided into two disjoint parts, where the Dirichlet and Neumann type boundary conditions are prescribed respectively for the displacement vector and the stress vector. Our approach is based on the potential method.

We look for a solution to the mixed boundary value problem in the form of linear combination of the single layer and double layer potentials with densities supported respectively on the Dirichlet and Neumann parts of the boundary.

This approach reduces the mixed BVP under consideration to a system of integral equations which contain neither extensions of the Dirichlet or Neumann data, nor the Steklov-Poincaré type operator. Moreover, the right hand sides of the system are vectors coinciding with the Dirichlet and Neumann data of the problem under consideration.

The corresponding matrix integral operator is invertible in the appropriate Bessel potential and Besov spaces, which implies the unconditional unique solvability of the mixed BVP in the corresponding Sobolev spaces and representability of solutions in the form of linear combination of the single layer and double layer potentials with densities supported respectively on the Dirichlet and Neumann parts of the boundary.

Date: May 16, 2023

Time: 20 : 00 local time in Tbilisi;

(Compare to your local time: <https://www.timeanddate.com/worldclock/georgia/tbilisi>);

How to join:

The seminar is organized on the **Cisco Webex Meetings**. If you are already registered, you do not need to register again. Otherwise, to join the seminar please send an e-mail to seminarim@ug.edu.ge or register here:

<https://forms.gle/xfQJ9fg1uqe7CrZw6>

You will then receive further information.

WEB of Seminar: <https://www.ug.edu.ge/en/tbilisi-analysis-and-pde-seminars>

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