

Courses 2016-17

October 17-21, 2016 (5 sessions) Time: 09:30 - 11:30 (a total of 10 hours)

BCAM Mazarredo 14, 48009 Bilbao, Basque Country, Spain

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LAYER POTENTIAL METHODS

This course is devoted to solve the Dirichlet and Neumann problems for Laplace's equation by the method of layer potentials.

Programme

We will start introducing the Dirichlet and Neumann problems for the Laplacian and the associated double and single layer potentials. We will continue discussing some basic facts about integral operators. Then, we will study in details several aspects of the double and single layer potentials.

Eventually, we will solve the Dirichlet and Neumann problems. Along the course, we will introduce and discuss some required results as those deduced in the Fredholm theory.

Prerequisites

Basic calculus in several variables.

Bibliography

The basic reference will be the book "Introduction to partial differential equations" (2nd edition) by Folland. Complementary references will be given throughout the course.

*Registration is free, but inscription is required before 12th October: So as to inscribe send an e-mail to roldan@bcamath.org. Student grants are available. Please, let us know if you need support for travel and accommodation expenses.