UNIVERSITÀ DEGLI STUDI DI MILANO

BANDO VISITING PROFESSORS "SHORT TERM"

Prof. Romina Gaburro, Department of Mathematics and Statistics, University of Limerick

Short course on

INVERSE PROBLEMS FOR PARTIAL DIFFERENTIAL EQUATIONS OF GEOPHYSICAL INTEREST

Wednesday, November 11th, 2020, 10:30-12:30

- A tutorial on Sobolev spaces and weak solutions of partial differential equations.
    - Banach spaces and linear operators in Banach spaces.

Thursday, November 12th, 2020, 10:30-12:30

- A tutorial on Sobolev spaces and weak solutions of partial differential equations.
    - Hilbert spaces.

Wednesday, November 18th, 2020, 10:30-12:30

- A tutorial on Sobolev spaces and weak solutions of partial differential equations.
    - Weak derivatives and $W^{k,p}(\Omega)$ Sobolev spaces.

Thursday, November 26th, 2020, 10:30-12:30

- A tutorial on Sobolev spaces and weak solutions of partial differential equations.
    - Weak solutions to elliptic partial differential equations/boundary value problems.

Wednesday, December 2nd, 2020, 10:30-12:30

- The inverse problem of identifying the leading coefficient of the prototypical elliptic equation: 1. Classical results and difficulties.
    - Calderón's inverse conductivity problem: the state-of-the-art until 2000.
    - Determining the conductivity in transport media: integration along characteristic lines.

Thursday, December 3rd, 2020, 10:30-12:30

- The inverse problem of the identification of the leading coefficient of the prototypical elliptic equation: 2. Recent results.
    - Results on Calderón's problem in the third millennium.
    - Univalent σ-harmonic mappings and their relevance to inverse problems.

Wednesday, December 9th, 2020, 10:30-12:30

- The inverse problem for the prototypical reduced wave equation.
    - The Helmholtz equation.

Thursday, December 10th, 2020, 10:30-12:30

- The inverse problem for the prototypical reduced wave equation.
    - Full waveform inversion.

For information, please, contact prof. Mauro Giudici (💻 mauro.giudici@unimi.it)