Singular integral operators and boundary value problems for analytic functions

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Timetable: 12 hrs. First lecture on December 5th, 2022, 14:00, (dates already fixed, see Calendar of Activities at https://dottorato.math.unipd.it/calendar), Torre Archimede, Room 2BC30.

Course requirements: the training course is a continuation of the classical course of the analytic function theory in the complex plane

Examination and grading:

SSD: MAT/05

Aim:

Course contents:
    Singular Cauchy integral on a rectifiable Jordan curve. Sufficient conditions for the existence of singular Cauchy integral. The Zygmund estimate for the singular Cauchy integral.
    Cauchy type integral. Sokhotski–Plemelj formulas for limiting values of the Cauchy type integral.
    Riemann boundary value problem. The solution of a jump problem. The solution of a homogeneous problem. The solution of an inhomogeneous problem.
    Singular integral equations with the Cauchy kernel on a rectifiable Jordan curve