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**UNIVERSITÄT
BERN**

Philosophisch-
naturwissenschaftliche Fakultät

Departement Mathematik und Statistik

Mathematisches Institut

LUDWIG SCHLÄFLI LECTURE

December 10, 2012, 17.15 h
Lecture Room B7
Mathematics Building
Sidlerstrasse 5
University of Berne

Coffee and tea at 16:15 h
in front of B7.

Dinner at 19.15 h at the
Restaurant Casino, Bern.
Registration for dinner
till December 01, 2012:
math@math.unibe.ch
www.math.unibe.ch

Prof. Dr. Albrecht Böttcher (TU Chemnitz)

Title:
Two projections and the beauties of the Cauchy singular integral

Abstract:
The lecture addresses a broad mathematical audience and is devoted to the intriguing interplay between two projections theorems and the spectral theory of singular integral operators. I will first give an introduction to the game with two projections and then outline how by employing the two projections strategy one can reduce the spectral theory of general singular integral operators with piecewise continuous coefficients to the identification of the spectra of certain local representatives. This identification is a great mathematical challenge, but also an extremely thrilling matter, which allows me to present many very nice pictures illustrating the beautiful metamorphosis of local spectra of singular integral operators from circular arcs through logarithmic horns up to quite exotic but completely understood sets.