



North Caucasus Center for Mathematical Research
of the Vladikavkaz Scientific Center of the RAS
Southern Mathematical Institute
of the Vladikavkaz Scientific Center of the RAS



International Seminar
"Operator Theory, Differential Equations and their Applications"

Seminar Chairmen: Prof. Anatoly G. Kusraev, Prof. Marat A. Pliev
Seminar Secretary: PhD Batradz B. Tasoev

October 27, 11AM (UTC+3)

Singular Traces and the Density of States

Prof. Fedor Sukochev,
University of New South Wales, Sydney, Australia.

The density of states is a non-negative measure associated to a Schrodinger operator H which is supported on its essential spectrum. Theoretical questions concerning the existence and properties of the density of states are of interest in solid state physics. We have recently found that quite generally the density of states measure can be computed by a formula involving a Dixmier trace, a tool from quantised calculus of A. Connes. This is a surprising new application of singular traces and methods from quantised calculus to mathematical physics which also uses recently developed techniques in operator integration theory. Joint work with N. Azamov, E. McDonald and D. Zanin.

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The seminar uses **Zoom** platform.

The seminar is organized by North Caucasus Center for Mathematical Research of the Vladikavkaz Scientific Center of the RAS jointly with Southern Mathematical Institute of the Vladikavkaz Scientific Center of the RAS.

If you have any questions please don't hesitate to contact the secretary of the seminar Batradz Tasoev at seminar_otde@mail.ru