

"The Trans-Carpathian Seminar on Geometry & Physics"

(See also the [Geometry & Physics @ DFT](#) seminar homepage)

Date: Wednesday, March 13, 2024, 15:15 Bucharest time

Location: online via Zoom

Speaker: **Prof. Radu Purice** (IMAR)

Title: **Some results in the spectral analysis of quantum Hamiltonians with magnetic fields**

Abstract: A brief summary of some results concerning the spectral analysis of quantum Hamiltonians described by Hoermander type symbols with bounded, smooth magnetic fields that are not supposed to vanish at infinity: regularity with respect to the field intensity, structure of the essential spectrum, creation of spectral gaps in 2-dimensional periodic Hamiltonians.

These results and the covariant 'magnetic' pseudo-differential calculus used in proving them, are the fruits of more than 20 years of research in cooperation mainly with Horia Cornean (Aalborg University), Bernard Helffer (Nantes University), Viorel Iftimie (Bucharest University), Marius Mantoiu (IMAR and University of Chile at Santiago), Serge Richard (Nagoya University and former at Lyon University). The talk will last approximately 50 minutes with some additional time for questions.