

# Program, SMS årsmöte, fredagen 9 juni 2023

Mötet äger rum i salen Pascal, Hörsalsvägen 1, matematiska vetenskaper,  
Chalmers tekniska högskola, Göteborg

- 13.10–14.00 Michael Björklund  
*Presentation av vetenskapliga resultat av årets Wallenberg-  
pristagare: Olof Sisask*
- 14.10–15.00 Per Salberger  
*Presentation av vetenskapliga resultat av årets Wallenberg-  
pristagare: Lilian Matthiesen*
- 15.00 Utdelning av Wallenbergpriset
- 15.05 Kaffepaus
- 15.15–16.05 Magnus Goffeng  
*(Wallenbergpristagare 2021) Counting negative eigenvalues  
with index theory*
- 16.15 Årsmöte. Dagordning finns i separat dokument.
- 17.30 Middag på restaurang “Krakow”, Karl Gustavsgatan 28, 41126  
Göteborg.  
Anmäl senast den 31 maj till Volodymyr Mazorchuk per e-post  
[mazor@math.uu.se](mailto:mazor@math.uu.se) om du vill delta i middagen.

Counting negative eigenvalues with index theory (by Magnus Goffeng)

Abstract: In this talk we will consider the Pauli Hamiltonian, a Schrödinger operator describing a spin particle moving in a magnetic field in two dimensions. The problem we will discuss is that of describing how many negative eigenvalues there are for its Neumann realization on a compact domain. We provide a sharp lower bound for the number of negative eigenvalues by means of a connection to Atiyah-Patodi-Singer's index theorem for Dirac operators arising from an elementary integration by parts. We conclude a new asymptotic formula for the counting function of the semiclassical Landau-Neumann Hamiltonian. Joint work with Søren Fournais, Ayman Kachmar and Mikael Persson-Sundqvist.