12:45–13:10: Arrival and Coffee
You are welcome to have a coffee with us before the first talk in the lunch room on the top floor of the MATH Department (room 4.4.19)

13:15–14:15
Inequalities that sharpen the triangle inequality for functions in $L^p$
Elliott Lieb (Princeton University)

Abstract:
Consider the $L^p$ triangle inequality for functions, $|f + g| \leq |f| + |g|$, which is saturated when $f = g$, but which is poor when $f$ and $g$ have disjoint support.
In 2009 Carbery proposed a slightly more complicated inequality to take into account the possible orthogonality, or lack of it, for two functions. With Eric Carlen and Rupert Frank and Paata Ivanisvili it has now been proved. In fact, a much stronger version was proved.
In a recent, subsequent paper with Carlen and Frank an extension to $N > 2$ functions was given.
Inequalities for $L^p$-norms that sharpen the triangle inequality and complement Hanner’s Inequality
arXiv:1902.04399 Carlen, Frank, Lieb,
Inequalities that sharpen the triangle inequality for sums of $N$ functions in $L^p$

14:15–15:15
Spectral synthesis for systems of exponentials and reproducing kernels
Anton Baranov (Saint Petersburg State University)

Abstract:
Let $x_n$ be a complete and minimal system of vectors in a Hilbert space $H$. We say that this system is hereditarily complete or admits spectral synthesis if any vector in $H$ can be approximated in the norm by linear combinations of partial sums of the Fourier series with respect to $x_n$. It was a long-standing problem whether any complete and minimal system of exponentials in $L^2(-a, a)$ admits spectral synthesis. Several years ago Yu. Belov, A. Borichev and myself gave a negative answer to this question which implies, in particular, that there exist non-harmonic Fourier series which do not admit a linear summation method. At the same time we showed that any exponential system admits the synthesis up to a one-dimensional defect. In the talk we will also discuss related problems for systems of reproducing kernels in Hilbert spaces of entire functions (such as Paley-Wiener, de Branges, Fock). The talk is based on joint works with Yu. Belov (St. Petersburg) and A. Borichev (Marseille).

15:15–15:45: Coffee Break

15:45–16:45
Some results for functionals of Aharanov-Bohm type
Michael Loss (Georgia Institute of Technology)

Abstract:
In this talk I present some variational problems of Aharanov-Bohm type, i.e., problems that include a magnetic flux that is entirely concentrated at a point.
This is maybe the simplest example of a variational problems for systems, the wave function being necessarily complex. The functional is rotationally invariant. The issue to be discussed is whether the optimizers have this symmetry or whether it is broken. This issue is addressed by exploiting a connection with the sharp version of the Caffarelli-Kohn-Nirenberg inequalities.

**16:45–17:45**

**On Laplace-Carleson embeddings**  
**Eskil Rydhe (University of Leeds)**

**Abstract:**

The talk deals with $L^p$ mapping properties of the one-sided Laplace transform. After a brief recollection of previous work by Jacob, Partington and Pott, I present a new result on so-called Laplace-Carleson embeddings. The main novelty of my result is that it extends beyond the regime of the Hausdorff-Young theorem. I will also discuss a simple connection to a result by Hardy and Littlewood. Given its simplicity, the formulation needed for this talk seems surprisingly difficult to find in the literature.

**18:30–20:30: Social Dinner at Restaurant Madklubben Østerbro** Østerbrogade 79, 1st floor. (Registration deadline May 22).