Mathematics and CS Seminar

The nonlinear Schrödinger equation for orthonormal functions

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Host: Robert Seiringer

In this talk I will discuss a generalization of the usual nonlinear Schrdinger equation to systems of N orthonormal functions. We can prove the existence of ground states for infinitely many N's (including $N=2$) when the exponent p of the nonlinearity is less than $\min(2,1+2/d)$, in dimension $d\geq1$. On the contrary, in dimension $d=1$ we show that there is no minimizer for all $N\geq2$ when $p=2$. Links with best constants in the Lieb-Thirring inequality will also be mentioned. Based on joint works with Rupert L. Frank, David Gontier & Faizan Q. Nazar.

Thursday, January 16, 2020 04:00pm - 06:00pm
Heinzel Seminar Room / Office Bldg West (I21.EG.101)

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