



SÉMINAIRE D' ANALYSE LIÈGE TRÈVES
SEMINAR ANALYSIS LÜTTICH TRIER

We invite most cordially to the next session of our joint seminar.

Friday, July 8, 2011
10:30 – 12:00 and 13:30 – 15:00
Building B37
University of Liège

Professor **Hervé Queffélec** from Lille will speak

On approximation numbers of composition operators.

This talk, which is motivated by joint work under progress with D. Li and L. Rodriguez-Piazza, will be divided in two parts:

1. In the first part, which will try to be as pedagogical and expository as possible, we will recall and comment the definition of approximation numbers and entropy numbers of a compact operator $T : X \rightarrow Y$ between Banach spaces X and Y . Those numbers are very good quantitative indicators of the degree of compactness of T . They are well-understood for the class of Hankel operators, thanks in particular to the works of Peller, Khursev, Megretski, Treil, who showed that for this class the sequence (a_n) of approximation numbers is essentially arbitrary. We will then introduce the composition operators C_φ attached to an analytic self-map φ of the unit disk \mathbb{D} , as well as their most basic properties.

2. In the second part, we will dwell on this class of composition operators, which are also operators with a symbol, and whose approximation numbers were very little known till recently. Some important differences with the Hankel case appear: the sequence (a_n) cannot tend to zero faster than geometrically, and we know exactly when the speed of convergence is geometric. On the other hand, it can be arbitrarily slow. And it can be estimated accurately in some cases, like that of lens maps. The reproducing kernels of the implied Hilbert space of analytic functions, and the notion of Carleson measure (or that of Carleson interpolating sequence) will play an important role in the proofs.

On the campus of the university the building B37 of the mathematical department is most easily found if one looks for the parking P32. If you need further information do not hesitate to contact

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