EPFL

B. Buffoni – M. Colombo – J. Krieger – Mathematics Section

SEMINAR OF ANALYSIS

FRIDAY 31 March 2023 - Room: CM 0 10 at 2.15 pm

Dr Jacek JENDREJ
(Université Sorbonne Paris Nord - FR)

will be giving a seminar entitled:

« Dynamics of kink clusters for scalar fields in dimension 1+1 »

Abstract:

We consider classical scalar fields in dimension 1+1 with a self-interaction potential being a symmetric double-well. Such a model admits non-trivial static solutions called kinks and antikinks. A kink cluster is a solution approaching, for large positive times, a superposition of alternating kinks and antikinks whose velocities converge to 0 and mutual distances grow to infinity. Our main result is a determination of the asymptotic behaviour of any kink cluster at the leading order. We also prove existence of a kink cluster for prescribed initial positions of the kinks. Finally, we show that kink clusters are universal profiles for formation of multikink configurations.
This is a joint work with Andrew Lawrie from MIT.

Lausanne, March 1, 2023
JK/rb