Prof. Bernard Dacorogna - Section Mathématiques

SEMINAIRE D'ANALYSE

➢ **VENDREDI 16 novembre 2012 à 15h15 - salle MA A330**

Monsieur **BRUNO FRANCHI** *(Universita di Bologna, Italie)* donnera une conférence sur le thème:

"Maxwell's equations in Carnot groups".

In this talk we define Maxwell's equations in the setting of the intrinsic complex of differential forms in Carnot groups introduced by M. Rumin. It turns out that these equations are higher order equations in the horizontal derivatives. In addition, when looking for a vector potential, we have to deal with a new class of higher order evolution equations that replace usual wave equations of the Euclidean setting and that are no more hyperbolic. We prove equivalence of these equations with the ``geometric equations'' defined in the intrinsic complex, as well as existence and properties of solutions. Finally, we prove that, in spite of their higher order, these equations can be seen as the limit (in a suitable sense) of usual Maxwell's equations.

Lausanne, le 7 novembre 2012
BD/VL

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