1051-35-214 **Alexis F. Vasseur*** (vasseur@math.utexas.edu) and **Cristina Caputo**. *Global regularity of solutions to a class of systems of reaction-diffusion.*

In this talk, we present the study of the regularity of solutions to some systems of reaction–diffusion equations, with reaction terms having a subquadratic growth. We show the global boundedness and regularity of solutions, without smallness assumptions, in any dimension $N$. The proof is based on blow-up techniques. The natural entropy of the system plays a crucial role in the analysis. It allows us to use of De Giorgi type methods introduced for elliptic regularity with rough coefficients. Even if those systems are entropy supercritical, it is possible to control the hypothetical blow-ups, in the critical scaling, via a very weak norm. (Received August 25, 2009)