



SEMINARIO
DI MATEMATICA APPLICATA



April, 14 2015 h. 15:00

Location : Aula C, Dipartimento di Matematica, via Saldini 50, Milano

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Well posedness of a kinetic model for angiogenesis

Abstract. Tumor induced angiogenesis processes including the effect of stochastic motion, branching and merging of blood vessels can be described by coupling an integro-differential kinetic equation of Fokker-Planck type with a reaction-diffusion equation for the tumor induced angiogenic factor (TAF). The chemotactic force field depends on the gradient of the TAF equation contains the first velocity moment (flux of blood vessels). We develop an existence and uniqueness theory for this system under natural assumptions on the initial data. Our theory combines the construction of fundamental solutions for associated linearized problems with comparison principles, sharp estimates of the velocity moments and compactness results for this type of kinetic and parabolic operators.

Il seminario è organizzato in collaborazione con la SCUOLA DI DOTTORATO IN SCIENZE MATEMATICHE, ADAMSS Centre (Advanced Applied Mathematical and Statistical Sciences) e CIMAB (Centro Interuniversitario per la Matematica Applicata a Biologia, Medicina ed Ambiente). Per ulteriori informazioni contattare il Prof. Giacomo Aletti.