

# Seminari Informal de Matemàtiques de Barcelona

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**Speaker:** Daniel Sánchez-Taltavull.  
**Universitat:** Centre de Recerca Matemàtica.

**Data:** dimarts 20 de Desembre de 2011.  
**Hora:** 17:15, cafè i galetes; 17:30, inici.  
**Lloc:** Aula T2 (al terrat), Facultat de Matemàtiques de la UB.

**Títol:** Models of latently infected cell activation and viral blip generation in HIV-infected patients on potent therapy.

**Resum:** In this introductory seminar, we will try to explain the utility of maths in the study of the Human Immunodeficiency Virus (HIV).

In the first part of the talk I will give a brief biological introduction. The abstract actually begins in the next paragraph.

Although potent combination therapy is usually able to suppress plasma viral loads in HIV-1 patients to below the detection limit of conventional clinical assays, a low level of viremia frequently can be detected in plasma by more sensitive assays. Moreover, many patients experience transient episodes of viremia above the detection limit, termed viral blips, even after being on highly suppressive therapy for many years. An obstacle to viral eradication is the persistence of a latent reservoir for HIV-1 in resting memory CD4+T cells. Motivated by viral persistence in HIV+ patients, we present a stochastic model of HIV viral dynamics in the blood stream. We also explore a mechanism for ongoing HIV replication in the face of antiretroviral drugs. We propose a model whereby multiple infections per cell lead to reduced sensitivity to drugs without requiring drug-resistant mutations.



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**Qui som?** SIMBa és un seminari jove organitzat per estudiants de doctorat de la facultat. Està dirigit a estudiants de doctorat, màster i, fins i tot, dels darrers cursos de grau. El nostre objectiu és donar a conèixer la recerca que estem fent, així com adquirir coneixements d'altres àrees de les matemàtiques diferents de la pròpia.

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