Viernes 12 de Marzo de 2010 a las 12.00

"Hillslope soil erosion and sediment delivery: Combining data and models"

Peter Hairsine

Dr Hairsine is an engineer by trade. He attended school in the city, but lived and worked in rural Queensland, Australia, doing a range of jobs as an agricultural contractor and employee of rural enterprises. He leads a series of workshops on research skills, including journal paper writing. He was drawn to research on the basis of his time spent on farms and now has over 25 years of research experience. He is motivated by research that is useful in a problem solving sense. He enjoys teaching, and gets great pleasure in leading the journal paper writing workshops.

Academic qualifications:

1983: Bachelor of Engineering (Distinction) Darling Downs Institute of Advanced Education (now the University of Southern Queensland), Australia,
1998: Doctor of Philosophy from the Griffith University, Queensland, Australia

Expertise: Hydrology, sediment transport, modelling materials moving in landscapes

This seminar provides an overview of the presenter's research concerning erosion of soil by water and its delivery to streams. The evolution of this approach is described through a series of laboratory, rainfall simulator and hillslope studies that evaluate and adjust a model that attempts to describe the basic process of entrainment, deposition and reentrainment.

The model progressively introduces more complexity to describe the influence of soil strength, vegetative cover, a distribution of sediment size and topography and the related spatial sequence of erosion, accumulation of deposits and the sediment delivery. While making the model more complex may seem attractive, it comes at a cost in parameter requirements and accumulation of errors. This trade off will be described and suggestions for future approaches discussed. The presentation will be illustrated with case studies from cropping, grazing and forested landscapes in Australia.