Geophysical Research Abstracts, Vol. 8, 10633, 2006
SRef-ID: 1607-7962/gra/EGU06-A-10633

Analysing suspended sediment load measurement errors in a small mountain Mediterranean catchment.

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A twelve-year long series of suspended sediment load measurements obtained at the Vallcebre catchments was analysed to estimate the range of measurement errors. Suspended sediment concentrations during events were measured using infra-red backscattering turbidimeters, ultra-sonic beam attenuation solids sensors, and automatic samplers. The first source of error lay in the quality of sensor readings and calibration equations. A second source was the representativeness of stream water samples. In addition, in the case of sensor malfunctioning, some modelling approach was needed to estimate sediment concentration during periods without measurement data. The most important result obtained suggests that, even though high sediment concentrations are routinely observed in these streams (up to 200 g l^{-1}) nevertheless, in the long run, moderate or low sediment concentrations during major floods play a major role in sediment transport and therefore, in determining the range of measurement errors.