Preface

The Abstracts consist of six volumes. They contain the abstracts submitted and accepted for the 65 Symposia of the 17th World Congress of Soil Science, the theme of which is:

Soil Science: Confronting New Realities in the 21st Century

Most of the 65 Symposia were proposed and accepted during the IUSS Council Meeting in April 2000 in Bangkok under the present structure of Commissions, Subcommissions and Working Groups. A few Symposia were added into the structure of the Scientific Programme of the Congress at later dates on specific requests by Chairpersons, International Agencies and National Soil Science Society, approved by Council Members through correspondence. Over 2300 abstracts were received but their actual number in these Abstracts is less than 1800. These six volumes of Abstracts have been structured as follows:

Volume I Symposia 01-12
Volume II Symposia 13-21
Volume III Symposia 22-36
Volume IV Symposia 37-52
Volume V Symposia 53-65 (This Volume)
Volume VI Index of Subjects and Authors

The voluminous publication of diverse scientific studies and reviews in soil science and related fields included in the Abstracts, Programme and Transactions of the Congress is considered a product of collective effort among soil scientists and scientists in related fields. It can serve as a basic tool to help confront new realities in soil science and mark the beginning of a new phase of soil science to advance into the twenty-first century. We have tried very hard to minimize our mistakes in editing and formatting each individual abstract in these books. However, due to very diverse styles of authors, it has been very difficult. We accept this with no excuses. Nevertheless we hope you will find the 17th World Congress of Soil Science fruitful and enjoyable.

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Size distribution of sediment detached by interrill erosion

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Dynamics of sediment transport during interrill soil erosion influence sediment characteristics evolution, especially the sediment size distribution. Sediment size distribution is determined by the original soil erodibility and the selectivity of detachment and transport processes. In this work we will particularly investigate the influence of soil erodibility and detachment selectivity at 1 m² scale. The aim of this study is to examine the sediment size distribution and the relationship between aggregate stability and soil erodibility.

The methodology is based on rainfall simulations and aggregate stability tests in order to characterize both original and detached soil.

Rainfall simulations were performed on 20 French cultivated soils. These soils were selected so as to cover a wide range of aggregate stability and soil erodibility. The texture ranges from sand to clay loam and silt with a majority of silt loam texture. The organic matter content ranges from 2 to more 6 g 100 g^{-1}.

The aggregate stability is assessed with the procedure presented by Le Bissonnais (1996). Rainfall simulations are performed on air-dried soils in small plots of 0.25 m² (0.5 × 0.5 m) with a 5% slope. The rainfall intensity is about 30 mm h^{-1}. For each experiment, runoff volume and sediment discharge are measured. Aggregates size distribution of sediment transported in runoff flow is assessed with a laser diffraction particle sizer. Duplicate samples are chemically dispersed and analyzed as well for primary particles size distribution.

The results of aggregate stability tests will be related with the soil erodibility. First results on clay soil show that the main part of aggregates transported by runoff flow is less than 500 µm in size. There is also a temporal evolution of the aggregates size distribution that is correlated with the evolution of the runoff rate.

Keywords: soil erosion, rainfall simulation, aggregate stability, sediment, detachment