SSS2.7

Advancements in modeling and remote sensing assessments in soil and water degradation processes

Conveners: Robert Wells , Encarnación Taguas, Ronald L. Bingner, Gerald A Corzo P, George Karatzas, Miguel A. Campo-Bescós, Saskia Foerster, Irene Marzolff

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Displays | Chat Tue, 05 May, 14:00–15:45 (Co-organized by HS13)

The quantification and understanding of hydrological, erosive, and biogeochemical processes in catchments are essential to the sustainable management of water and soil resources. Soil-erosion studies and hydrological simulation models comprise a large range of scopes and objects of investigation with different levels of spatial and temporal scales and/or innovative approaches that are important tools to address environmental problems in a cost-effective way. Thus, for example, analyses may range from absence-presence inventories of erosion features in large areas, -such as badlands-, to detailed studies of rill and ephemeral gullies; or focus on the assessment of the overall expansion of permanent gullies and their evolution; characterization of headcut migration; or identification of downstream deposition areas after intense sheet/rill erosion; among others. Assessment of the environmental impact of economic activities in catchments should be based on the acquisition of experimental data to implement and/or to evaluate conservation practices at different scales. However, monitoring systems can be restricted by technological, economic and legal factors, spatial and temporal sampling strategies and availability, and are rarely conceived in the long term.

Remote sensing is increasingly being utilized to address a plethora of hydrological and soil erosion issues, providing highly valuable information both on surface reflection and surface heights. In fact, the continued improvement of remote sensing techniques has allowed the study of a large range of erosive processes at varying spatial and temporal scales. More sensitive and accurate sensors are available every day. In addition, the frequency of observations is rapidly increasing and new statistical analysis techniques are increasingly used.

Here, the authors are encouraged to present new environmental challenges related with the use of models, remote sensing techniques and new experiments to address hydrological and erosive issues. In addition to classical modeling procedures such as evaluation of models; new conceptualizations to address current environmental problems facing society, tools and techniques aimed to conserve water, soil and nutrients, and evaluate degradation processes of soil and water as well as analyses concerning the ways and potential of using remote-sensing techniques to assess soil erosion are also expected.

Tuesday, 05 May, 14:00–15:45	
Chairperson: Robert Wells	
14:00–14:02	**EGU2020-22200** **solicited** **Visualizing resource dependencies of the urban system at multiple scales: a hydrological case study** **Héctor Angarita, Vishal Mehta, and Efraín Dominguez**
14:02–14:04	EGU2020-12287 **Modelling the responses of extreme events hydrometeorological events in the landslides and floods of the Combeima river basin.** **Laura Viviana Garzon Useche, German Ricardo Santos Granados, and Gerald Augusto Corzo Perez**
14:04–14:06	EGU2020-22024 **Spatio temporal visualization of soil critical sources areas to assess the dynamics of source pollution in agricultural management practices** **Natalia Uribe and Gerald A Corzo P**
14:06–14:08	EGU2020-8212 **Large-scale Groundwater Simulation using Artificial Neural Networks in the Danube River Basin** Illias Landros, Ioannis Trichakis, Emmanouil Varouchakis, and George P. Karatzas
14:08–14:10	EGU2020-4340 **A remote sensing approach for evaluating regional-scale topsoil loss in the Midwestern United States** **Isaac Larsen, Evan Thaler, and Qian Yu**
14:10–14:12	EGU2020-22225 **Identifying the impact of human activities on soil erosion- the case of Jiangxi Province, China** **Yanqing Lang, Xiaohuan Yang, and Hongyan Cai**
14:12–14:14	EGU2020-17972 **Forecasting landslides using a spatiotemporal analysis of remote sensing data** **Carlos Alfredo Mesa Zuluaga, German Ricardo Santos Granados, and Gerald Augusto Corzo Perez**
14:14–14:16	EGU2020-21326 **Estimating badland denudation with pin measurements and high resolution Digital Elevation Models derived from UAV image analysis** Brigitte Kuhn, Nikolaus Kuhn, John Boardman, and Vincent Schneider
14:16–14:18	EGU2020-13787 **A systematic assessment of uncertainties in large scale soil loss estimation from different representations of USLE input factors – A case study for Kenya and Uganda** **Christoph Schürz, Bano Mehdi, Jens Kiesel, Karsten Schulz, and Mathew Herrnegger**
14:18–14:20	EGU2020-17539 **Photogrammetricaly measured sheet and rill erosion on steep slopes** **Tomas Laburda, Petr Kavka, Romana Kubínová, Martin Neumann, Ondřej Marek, and Adam Tejkl**
14:20–14:22	EGU2020-10023 **Spatiotemporal assessment of ephemeral gully characteristics using low altitude aerial imagery: an approach for quantifying** **Henrique Momm, Robert Wells, Carlos Castillo, and Ronald Bingner**
14:22–14:24	EGU2020-12788 **Impact on wheat production of anthropic soil erosion by recent gully filling at the Campiña landscape in Southern Spain** **Carlos Castillo, Rafael Pérez, and Miguel Vallejo Orti**
14:24–14:26	EGU2020-8325 Soil Cohesion Development under Different Pore and Size Characteristics **Cagla Temiz, Fikret Ari, Selen Deviren Saygin, Sefika Arslan, Mehmet Altay Unal, and Gunay Erpul**
14:26–14:28	EGU2020-3619 **Estimation of the Rates of Particle Aggregation and Disaggregation in the Mesopelagic Zone of the Eastern North Pacific** Vinicius Amaral, Olivier Marchal, Phoebe Lam, Jong-Mi Lee, Ken Buesseler, and Montserrat Roca Marti
14:28–14:30	EGU2020-13427 **Evaluation of olive grove management on various soils at the micro-catchment scale with the AnnAGNPS model to quantify their impacts on organic carbon** **Encarnación Taguas, Ronald L. Bingner, Henrique Momm, Robert R. Wells, and Martin Locke**
14:30–15:45	**Interactive comments about PICO presentations**